



Department of Energy Albuquerque Operations Kansas City Area Office P.O. Box 410202 Kansas City, Missouri 64141

Document Processing Center Office of Toxic Substances, TS-790 U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460

Attn: CAIR Reporting Office

JUN 0 6 1989

SEPA-OTS

0006571290

90-890000133

#### Gentlemen:

Attached is reporting form 7710-52 for toluene di-isocyanate, CAS No. 26471-62-5, as required under section 8(a) of the Toxic Substances Control Act. The report is specifically required in response to 40 CFR Part 704, Comprehensive Assessment Information Rule; Final Rule, published in the Federal Register, Thursday, December 22, 1988.

Our interpretation of the rule indicates that only sections 1, 2.04-2.09, 2.11-2.16, 3.11, 4.01-4.05, 5.11, 6.05, 7.01, 7.03-7.06, 8.01, 8.05, 8.06, 8.23, 9.01-9.15, 9.19, 9.20, 9.22, 10.01, 10.02, 10.05, 10.08-10.16 and 10.23 are believed applicable for reporting.

If there are questions, please contact Pat Hoopes, Chief, Environment, Safety & Health Branch at FTS 997-3449.

Sincerely,

Pat Hoopes

Chief

Environment, Safety & Health Branch

Tene (-Taylo-

#### Attachments

cc: Jack A. Knuth, Allied-Signal, w/o attach
J.G. Themelis, EHD/AL, w/attach



## ' CONTAINS NO CBI

Form Approved
OMB No. 2010-0019
Approval Expires 12-31-89

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Comprehensive Assessment Information Rule REPORTING FORM

When completed, send this form to:

Document Processing Center Office of Toxic Substances, TS-790 U.S. Environmental Protection Agency 401 M Street, SW Washington, DC 20460 Attention: CAIR Reporting Office

For Agency Use Only:
Date of Receipt:
Document Control Number:
Docket Number:

T	his Comprehensive Assessment Information Rule (CAIR) Reporting Form has been
cc	The same and a settle
	ompleted in response to the Federal Register Notice of [1]2][2]2][8]8
a.	If a Chemical Abstracts Service Number (CAS No.) is provided in the Pederal
	Register, list the CAS No
ь.	either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.
	(i) Chemical name as listed in the rule N/A
	Name of mixture as listed in the rule N/A
	(iii) Trade name as listed in the rule
с.	the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.
	Name of category as listed in the rule N/A
	CAS No. of chemical substance [7] 2] 614 17 171-1617 1-151
	Name of chemical substance Benezene, 1, 3 diisocyanatometh
der	ntify your reporting status under CAIR by circling the appropriate response(s).
anu	liacturer
≖po	Figr
roc	RSSOF
/ P	manufacturer reporting for customer who is a processor
/P	processor reporting for customer who is a processor
	••
	der anu apo roc

1.03 <u>CBI</u> [_]	in Yes	s the substance you are reporting on have an "x/p" designation associated with it the above-listed <a href="Federal Register">Federal Register</a> Notice?
1.04 <u>CBI</u> []		Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.  Yes
		You have chosen to report for your customers  [ ] You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting. * See Section 4 - Material Safety Data Sheets For Traders Names
1.05 CBI [_]	rep Tra Is Yes	you buy a trade name product and are reporting because you were notified of your orting requirements by your trade name supplier, provide that trade name.  N/A  the trade name product a mixture? Circle the appropriate response.
1.06 <u>CBI</u> []	"I ent	tification The person who is responsible for the completion of this form must not the certification statement below:  thereby certify that, to the best of my knowledge and belief, all information ered on this form is complete and accurate."  J. G. Ochoa  NAME  SIGNATURE  OATE SIGNED  Supervisor  (816 ) 997 - 2474  TITLE  TELEPHONE NO.
[_]	Mark	(X) this box if you attach a continuation sheet.

1.07 <u>CBI</u> [_]	Exemptions From Reporting If with the required information of within the past 3 years, and the for the time period specified in are required to complete section now required but not previously submissions along with your Section	n a CAIR Reports information the rule, the firm of this CA submitted. Firm 1 submiss	ting Form for the is current, accusen sign the certi. IR form and provide a copy of ion.	rate, and complete fication below. You de any information any previous
	"I hereby certify that, to the information which I have not into EPA within the past 3 years period specified in the rule."	cluded in this	: CAIR Reporting F	orm has been submitted
	N/A		SIGNATURE	DATE SIGNED
	NAME		SIGNATURE	DATE SIGNED
	TITLE	() <u>T</u> E	CLEPHONE NO.	DATE OF PREVIOUS SUBMISSION
CBI	CBI Certification If you have certify that the following state those confidentiality claims who "My company has taken measures and it will continue to take the been, reasonably ascertainable using legitimate means (other to a judicial or quasi-judicial prinformation is not publicly availy would cause substantial harm to	ements truthfuich you have a to protect the ese measures; by other perso han discovery oceeding) with ilable elsewhe	ally and accurated asserted.  confidentiality the information ions (other than go based on a showing the company's are; and disclosur	of the information, s not, and has not vernment bodies) by g of special need in consent; the
	N/A NAME		SIGNATURE	DATE SIGNED
	TITLE	() _	TELEPHONE NO.	
<u></u>	Mark (X) this box if you attach	a continuatio	n sheet.	

PART 1	B CORPORATE DATA
1.09	Facility Identification
<u>CBI</u>	Name $[U]N]I]T]E]D]_[S]T]A]T]E]S]_[D]E]P]A]R]T]M[E]N]T]_[Address [P].]O].]$
	(K)A)N)S)A)S)]C)IIIY]   -   -   -   -   -   -   -   -   -
	$ \begin{bmatrix} \underline{M} \\ \underline{P} \end{bmatrix} = \begin{bmatrix} \underline{6} \\ \underline{4} \\ \underline{1} \end{bmatrix} = \begin{bmatrix} \underline{0} \\ \underline{2} \\ \underline{1} \end{bmatrix} = \begin{bmatrix} \underline{0} \\ \underline{2} \end{bmatrix} = \begin{bmatrix} \underline{0} \\ \underline{0} \end{bmatrix} = \begin{bmatrix} \underline{0} \\ \underline{0}$
	Dun & Bradstreet Number       N/A       []]]-[]]]]-[]]]         EPA ID Number       MO 0 8 9 9 0 0 1 1 0 5 2 4 1         Employer ID Number       N/A       []]]]]]]]]         Primary Standard Industrial Classification (SIC) Code       9 7 0 1 1 1 1         Other SIC Code       N/A       []]]]]]]
	Other SIC Code
1.10	Company Headquarters Identification
CBI	Name [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	[_]_] [_]_]-[_]_][_]_]_] State
	Dun & Bradstreet Number       []]]-[]]]]-[]]]]]         Employer ID Number       []]]]]]]]]]]]
[_]	Mark (X) this box if you attach a continuation sheet.

1.11	Parent Company Identification
CBI	Name [ ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ]
	Address [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	[_]_] [_]_]_]_]_]_][_]_]_]_
-	Dun & Bradstreet Number
1.12	Technical Contact
CBI	Name (A][][][][][][][][][][][][][][][][][][][
[_]	Title [K]A]N]S]A]S] ICITITIVI IDITIVITISITIONI IIIIIIII
	Address [P]0]1B101X1-141119115191-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
	[M]O] [6]4]1]4]1-[6]1]6]9 State
	Telephone Number
1.13	This reporting year is from $[\overline{1}]\overline{0}$ $[\overline{8}]\overline{7}$ to $[\overline{1}]\overline{0}$ $[\overline{8}]\overline{8}$ Mo. Year
	•
	$m{\cdot}$
,_,	Mark (X) this box if you attach a continuation sheet.
ı—ı	Mark (v) this now it los access a continuent

1.14	Facility Acquired If you purchased this facility during the reporting year, provide the following information about the seller:
CBI	Name of Seller [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	(_1_1_1_1_1_1_1_1_1_1_1_1_1_1_1_1_1_1_1
	[_]_] [_]_]_]_]_][_]_]_]_ State
	Employer ID Number
٠	Date of Sale
	Contact Person [_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	Telephone Number
1.15	Facility Sold If you sold this facility during the reporting year, provide the following information about the buyer:
CRT	Name of Buyer [ ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ] ]
CBI	Mailing Address []]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
(,	Street Street
	[_]_] [_]_]_]_]_][_]_]_]_ State
	Employer ID Number
	Date of Purchase
	Contact Person [_]_]_]_]_]_]_]_]_]_]_]_]_]_]
	Telephone Number
[_]	Mark (X) this box if you attach a continuation sheet.

CBI	Classification	Quantity (kg/yr)
[_]	Manufactured	0
		_
	Imported  Processed (include quantity repackaged)	
	Of that quantity manufactured or imported, report that quantity:	•
	In storage at the beginning of the reporting year	N/A
	For on-site use or processing	
	For direct commercial distribution (including export)	
	In storage at the end of the reporting year	<u>N/A</u>
	Of that quantity processed, report that quantity:	
	In storage at the beginning of the reporting year	3200
	Processed as a reactant (chemical producer)	4600
	Processed as a formulation component (mixture producer)	0
	Processed as an article component (article producer)	1600
	Repackaged (including export)	0
	In storage at the end of the reporting year	1600

 $<sup>[ \</sup>underline{ } ]$  Mark (X) this box if you attach a continuation sheet.

PART	C IDENTIFICATION OF MIXTUR	RES	
1.17 CBI	Mixture If the ligged sor a component of a mixture chemical. (If the mixture each component chemical fo	COMPAGNA	quired to report is a mixture ormation for each component port an average percentage of
<u> </u>	Component Name	Supplier Name	Average 2 Composition by Veight (specify precision, e.g., 45% ± 0.5%)
	Toluene Diisocyanate	Mobay or Olin	67
	TDI/Polyester Polyol	Allied-Signal	33

Total

1001

 $\{\overline{\underline{X}}\}$  Mark (X) this box if you attach a continuation sheet.

dixture If the ligged suppression a component of a mixture themical. (If the mixture each component chemical for	COMPOSITION to marrial INT	equired to report is a mixture formation for each component sport an average percentage of
Component Name	Supplier Name	Average X Composition by Weight (specify precision, e.g., 45X ± 0.5%)
Toluene Diisocyanate	Mobay or Olin	65
TDI/Polyester Polyol	Allied-Signal	35
	Name Toluene Diisocyanate	Toluene Diisocyanate Mobay or Olin  TDI/Polyester Polyol Allied-Signal

Total

1007

 $<sup>\{\</sup>overline{X}\}$  Mark (X) this box if you attach a continuation sheet.

#### PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the ligged substance on which you are required to report is a mixture or a component, of a mixture, provide the Moderning information for each component chemical. (If the mixture composition is marriable, report an average percentage of each component chemical for all formulacions.)

CBI

[\_]

Component Name	Sumplier Name	Average X Composition by Weight (specify precision, e.g., 452 ± 0.5%)
Toluene Diisocyanate	Mobay or Wlim	63.5
TDI/Polyester Polyol Prepolymer	Allied-Signal	36.5
		Total 100X

 $<sup>[\</sup>overline{X}]$  Mark (X) this box if you attach a continuation sheet.

1.17	Mixture If the listed substance on which you are required to report is a mixture or a component, of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)			
<u>CBI</u>	each component chemical for	all formulations.)	poor an average percentage or	
''	Component Name	Supplier Name	Average Z Composition by Veight (specify precision, e.g., 45% ± 0.5%)	
	Toluene Diisocyanate	Mobay or Olin	63	
	TDI/Polyester Polyol Prepolymer	Allied-Signal	37	

 $[\overline{X}]$  Mark (X) this box if you attach a continuation sheet.

### PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the ligted substance on which you are required to report is a mixture or a component, of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each componen: chemical for all formulations.)

CBI

Component Name	Supplier Name	Average X Composition by Weight (specify precision, e.g., 45X ± 0.5%)
Toluene Diisocyanate	Mobay or Olin	53
TDI/Polyester Polyol	Allied-Signal	17
Prepolymer		47
		Total 100%

 $[\overline{X}]$  Mark (X) this box if you attach a continuation sheet.

	PART	C	IDENTIFICATION OF MIXTURES	
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1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component, of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

Component Name	Supplier Name	Average X Composition by Weight (specify precision, e.g., 45X ± 0.5X)
Toluene Diisocyanate	Mobay or Olin	27
TDI/Polyester Polyol Prepolymer	Allied-Signal	73
		Total 100X

 $[\overline{x}]$  Mark (X) this box if you attach a continuation sheet.

1.17 CBI	Mixture If the listed sor a component of a mixture chemical. (If the mixture each component chemical for	COMPORTATION (	quired to report is a mixture ormation for each component port an average percentage of
<u> </u>	Component Name	Supplier Name	Average X Composition by Veight (specify precision, e.g., 45% ± 0.5%)
	Toluene Diisocyanate	Mobay or Olin	20 ± 1
	Polymeric Isocyanate	Dow	80 ± 1

 $\{\overline{X}\}$  Mark (X) this box if you attach a continuation sheet.

#### PART C IDENTIFICATION OF HIXTURES 1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component, of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.) CBI l = 1Average I Composition by Weight Component Supplier (specify precision, Name Name e.g., 452 + 0.5%) Toluene Diisocyanate Mobay or Olin 60 TDI/Polyester Polyol Allied-Signal 35 Prepolymer Trichlorotrifluoroethane DuPont 5 Total 1007

 $<sup>\{\</sup>overline{X}\}$  Mark (X) this box if you attach a continuation sheet.

#### PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component, of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[\_]

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% + 0.5%)
Toluene Diisocyanate	Mobay or Olin	13 ± 1
Polymeric Isocyanate	Dow	53.5 ± 0.5
Trichlorotrifluoroethane	DuPont	33.5 ± 0.5
		Total 1001

 $<sup>[\</sup>overline{X}]$  Mark (X) this box if you attach a continuation sheet.

2.04	State the quantity of the listed substance that your facility manufactured, imported or processed during the 3 corporate fiscal years preceding the reporting year in descending order.
CBI	· •
[_]	Year ending $[\overline{1}]\overline{0}$ $[\overline{8}]\overline{8}$ Mo. Year
	Quantity manufactured 0 kg
	Quantity imported 0 kg
	Quantity processed <u>11400</u> kg
	Year ending
	Quantity manufactured 0 kg
	Quantity imported 0 kg
	Quantity processed
	Year ending $[\overline{1}]\overline{0}$ $[\overline{8}]\overline{6}$ Mo. Year
	Quantity manufactured 0 kg
	Quantity imported 0 kg
	Quantity processed 9000 kg
2.05 CBI	Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.
[_]	Continuous process
	Semicontinuous process
	Batch process
	* Not Applicable, did not manufacture listed substance.
	$oldsymbol{\cdot}$
<u></u>	Mark (X) this box if you attach a continuation sheet.
·—,	the state of the s

CBI	Specify the manner in w appropriate process typ		he listed substance.	Circle all
[_]	Continuous process			
	Semicontinuous process			
	Batch process			_
2.07 CBI	State your facility's n substance. (If you are question.)	ame-plate capacity f a batch manufacture	or manufacturing or per or batch processor,	rocessing the listed do not answer this
	N/A - Batch Processor			
	Manufacturing capacity		_	
	Processing capacity			kg/yr
2.08 CBI	If you intend to increa manufactured, imported, year, estimate the incr volume.	or processed at any	time after your curr	ent corporate fiscal year's production
		Manufacturing	Importing	Processing
	•	Quantity (kg)	Quantity (kg)	Quantity (kg)
-	Amount of increase		Quantity (kg)	Quantity (kg)
	Amount of increase  Amount of decrease	Quantity (kg)	Quantity (kg)	Quantity (kg)
			Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)
	Amount of decrease		Quantity (kg)	Quantity (kg)

2.09	listed substanc	argest volume manufacturing or processing proce e, specify the number of days you manufactured g the reporting year. Also specify the average s type was operated. (If only one or two opera	or processed number of h	l the listed nours per
CBI			Days/Year	Average Hours/Day
	Process Type #1	(The process type involving the largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
	·	Processed	14	8
	Process Type #2	(The process type involving the 2nd largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
		Processed	N/A	N/A
	Process Type #3	(The process type involving the 3rd largest quantity of the listed substance.)		
		Manufactured	N/A	N/A
		Processed	N/A	N/A
2.10 <u>CBI</u> [_]	substance that chemical.	um daily inventory and average monthly inventors was stored on-site during the reporting year in	the form of	a bulk
	Average monthly	inventory	•170	00 kg
		•		
[_]	Mark (X) this b	ox if you attach a continuation sheet.		

## BEST GOPY AVAILABLE

Related Product Types List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of hyproducts, coproducts, or impurities means the source from which the hyproducts
means the source from which the byproducts, coproducts, or impurities introduced info the product (e.g., carryover from raw material, reaction product, etc.).

<u>CAS No.</u> 70729-83-8	Chemical Name Isocyanate Terminated	Byproduct, Coproduct or Impurity <sup>1</sup>	Concentration (%) (specify ± precision) 36.5	Source of By- products, Co- products, or Impurities
	Co-polymer of a			Reaction Product
	polyester polyol and			Froduct

Use the following codes to designate byproduct, coproduct, or impurity:

 $\{\overline{X}\}$  Hark (X) this box if you attach a continuation sheet.

B - Byproduct

C = Coproduct
I = Impurity

## BEST COFY AVAILABLE

Related Product Types List any byproducts, coproducts, or impurities present virtue listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of hyproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced info the product (e.g., carryover from raw material, reaction product, etc.).				
<u>CAS No.</u> 71342-93-3	Chemical Name Isocyanate Terminated	Byproduct, Coproduct or Impurity <sup>1</sup>	Concentration (X) (specify 2	Source of By products, Co products, or Impurities Reaction
	Co-polymer of a			Product
· · · · · · · · · · · · · · · · · · ·	polyester polyol and TDI			1100000
	tured, import means the sou introduced in etc.).  CAS No.	tured, imported, or processed. The source from which the byproduct introduced into the product (e.g., carretc.).  CAS No.  Chemical Name  To-polymer of a  polyester polyol and	tured, imported, or processed. The source of hyproduct means the source from which the byproducts, coproduct introduced into the product (e.g., carryover from ravetc.).    CAS No.   Chemical Name   Syproduct, Coproduct or Impurity or	tured, imported, or processed. The source of hyproducts, coproducts, enproducts, enproducts, enproducts, or impurities introduced into the product (e.g., carryover from rav material, reactietc.).    CAS No.   Chemical Name   Syproduct, Concentration (Z) (specify 2 or Impurity

B = Byproduct C = Coproduct I = Impurity

 $<sup>\{\</sup>overline{\underline{X}}\}$  Mark (X) this box if you attach a continuation sheet.

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	CAS No.	Chemical Name	Byproduct, Coproduct or Impurity <sup>1</sup>	Concentration (%) (specify ± % precision)	Source of By products. Co products, or Impurities
	57412-70-1	Isocyanate Terminated	С	47	Reaction
		Co-polymer of a			Product
		polyester polyol and			,
		TDI			
•					

I = Impurity

 $<sup>\{\</sup>overline{\underline{X}}\}$  Mark (X) this box if you attach a continuation sheet.

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2.11  CBI  [ ]	Related Product Types List any byproducts, coproducts, or impurities; the listed substance in concentrations greater than 0.1 percent as it is tured, imported, or processed. The source of hyproducts, coproducts, or means the source from which the byproducts, coproducts, or impurities are introduced into the product (e.g., carryover from raw material, reaction etc.).							
	CAS No.	Chemical Name	Byproduct, Coproduct or Impurity <sup>1</sup>	Concentration (X) (specify 2 2 precision)	Source of By products, Co products, or Impurities			
	68609-57-4	Isocyanate Terminated	С	35	Reaction			
		Co-polymer of a			Product			
		polyester polyol and						
	Use the follow	ring codes to designate by	product, coproc	iuct, or impurity	;			

C = Coproduct
I = Impurity

 $<sup>\{\</sup>overline{\underline{X}}\}$  Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of hyproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, CBI Source of By-Byproduct. Concentration products, Co-Coproduct (X) (specify : CAS No. products, or Chemical Name or Impurity1 I precision) Impurities 70729-83-8 Isocyanate Terminated 8.5 Reaction Co-polymer of a Product polyester polyol and

TDI

Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct

C - Coproduct

I - Impurity

# BEST GODY AVAILABLE

purities	product product Impuri	Concentration (%) (specify ±	Byproduct, Coproduct or Impurity <sup>1</sup>	Chemical Name	CAS No.	
	Reacti	37	С	Isocyanate Terminated	9016-16-7	
duct	Produc			Co-polymer of a		
				polyester polyol and		
				TDI		
						•
						•

<sup>-</sup> Coproduct - Impurity

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j	Existing Product Types imported, or processed the quantity of liered total volume of listed quantity of listed substituted under column b., the instructions for furnishments	enharance you use substance used du tance used captiv	for each product type as ing the reporting year. By on-site as a percent	orting year. List  a percentage of the Also list the
	Product Types	b. Z of Quantity Hanufactured. Imported, or Processed	c. % of Quantity Used Captively	d.
	. X	100	<b>On-Site</b> 60	Type of End-Users <sup>2</sup>
•				
•				
) } } }	Use the following codes  A = Solvent  B = Synthetic reactant  C = Catalyst/Initiator/A	ccelerator/ /Scavenger/ equestrant egreaser odifier/Antivear r ive and additives to designate the	L = Moldable/Castable/R M = Plasticizer N = Dye/Pigment/Coloran O = Photographic/Reprog and additives P = Electrodeposition/P Q = Fuel and fuel addit R = Explosive chemicals S = Fragrance/Flavor che T = Pollution control ci U = Functional fluids au V = Metal alloy and addit V = Rheological modifies X = Other (specify) Poly ype of end-users:	t/Ink and additives raphic chemical lating chemicals and additives emicals hemicals had additives tives
4	: = Industrial CM = Commercial	CS - Const		
	••			

<u>CBI</u>	import, or process for substance used during t	For each use, spec each use as a percenter he reporting year. as a percentage of each product type.	nry the quantity ntage of the tot Also list the o the value listed	And expect to manage are
	a.	b.	c.	d.
	Product Types <sup>1</sup>	% of Quantity Manufactured, Imported, or Processed	% of Quanti Used Captiv On-Site	vely ,
	X	100	60	H
	·			·
	Use the following code  A = Solvent B = Synthetic reactant C = Catalyst/Initiator Sensitizer D = Inhibitor/Stabilic Antioxidant E = Analytical reagen F = Chelator/Coagulant G = Cleanser/Detergen H = Lubricant/Friction agent I = Surfactant/Emulsi J = Flame retardant K = Coating/Binder/Add	t r/Accelerator/ zer/Scavenger/ t t/Sequestrant t/Degreaser n modifier/Antiwear fier hesive and additives	L = Moldable/Community M = Plasticize N = Dye/Pigmen O = Photograph and additiv P = Electrodepo Q = Fuel and for R = Explosive S = Fragrance/Community T = Pollution U = Functional V = Metal allog W = Rheologica X = Other (special)	t/Colorant/Ink and additive ic/Reprographic chemical ves osition/Plating chemicals uel additives chemicals and additives Flavor chemicals control chemicals fluids and additives y and additives l modifier cify) Polyurethane Foam Component

<b>a.</b>	b. Final Product's	c. Average X Composition of Listed Substance	d. Type of				
Product Type <sup>1</sup>	Physical Form	in Final Product	End-Users				
<u> </u>	Н	Variable from 8-47%	Н				
	· · ·						
<sup>1</sup> Use the following of	codes to designate pr						
A = Solvent		L = Moldable/Castable/	Rubber and addi				
B = Synthetic reactant	tant	M = Plasticizer					
C = Catalyst/Initia	ator/Accelerator/	N = Dye/Pigment/Colors					
Sensitizer		<pre></pre>	ographic chemica				
D = Inhibitor/Stabi	ITIzer/Scavenger/	######################################	/Plating chemica				
Antioxidant							
E = Analytical reag F = Chelator/Coagui		$ \mathfrak{D} = \text{Fuel and fuel additive} \\ \text{equestrant} \qquad \mathbb{R} = \text{Explosive chemicals an} $					
G = Cleanser/Deterg			chemicals				
H = Lubricant/Frica	tion modifier//Antiwes						
agent		W = Functional fluids	and additives				
I = Surfactant/Emu	lsifier	W = Metal alloy and ad					
J = Flame retardana		W = Rheological modifi					
<pre>K = Coating/Binder?</pre>	Adhesive and additiv	$\mathbf{x} = 0$ wher (specify) $\mathbf{p}$					
<sup>2</sup> Use the following «	Component  2 Use the following codes to designate the final product's physical form:						
A = Gas	<b>¥2</b> = €	ystallime solid					
B = Liquid	F3 = Gr	anules					
C = Aqueous solution		yen august					
D = Paste	€ = Ge						
E = Slurry	H = 9t	her (specify) Thick liqu	10				
F1 = Powder							
_	codes to designate th						
T T-d	(CS = Co	<b>msumer</b> d <b>er (specify)</b> Government					
I = Industrial	<u>ia</u> ≈ 1970.	nem (Specialy) Government					
CM = Commercial							

2.15 CBI	Circl liste	e all applicable modes of transportation used to deliver described substance to off-site customers.	bulk shipments	of the						
[-]	Truck		• • • • • • • • • • • • •	(1						
· <b>_</b> -	Railcar									
	Plane			(5						
		(specify)		_						
2.16 CBI	or pr	mer Use Estimate the quantity of the listed substance epared by your customers during the reporting year for use listed (i-iv).	e used by your co se under each ca	ustomers ategory						
[_]	Categ	cory of End Use								
	i.	Industrial Products								
		Chemical or mixture	N/A	kg/yr						
		Article	N/A	kg/yr						
	ii.	Commercial Products								
		Chemical or mixture		kg/yr						
	-	Article	n/A	kg/yr						
	iii.	Consumer Products								
		Chemical or mixture	N/A	kg/yr						
		Article	N/A	kg/yr						
	iv.	Other								
		Distribution (excluding export)	N/A	kg/yr						
		Export	N/A	kg/yr						
		Quantity of substance consumed as reactant	4800	kg/yr						
		Unknown customer uses	N/A	kg/yr						

	SECTION 3 PROCESSOR RAW MATERIAL IDEN	TIFICATION	
PART	A GENERAL DATA		
3.01 <u>CBI</u>	Specify the quantity purchased and the average price for each major source of supply listed. Product trad The average price is the market value of the product substance.	es are treated a	s purchases.
	Source of Supply	Quantity (kg)	Average Price (\$/kg)
	The listed substance was manufactured on-site.	N/A	N/A
	The listed substance was transferred from a different company site.	N/A	N/A
	The listed substance was purchased directly from a manufacturer or importer.	N/A	N/A
	The listed substance was purchased from a distributor or repackager.	6600	2.63
	The listed substance was purchased from a mixture producer.	N/A	N/A
3.02 CBI	Circle all applicable modes of transportation used to your facility.	deliver the lis	ted substance to
[_]	Truck	• • • • • • • • • • • • • • • •	1
	Railcar	• • • • • • • • • • • • • • • • • • • •	2
	Barge, Vessel	• • • • • • • • • • • • • • • • • • • •	3
	Pipeline	• • • • • • • • • • • • • • • • • • • •	4
	Plane	• • • • • • • • • • • • • • • •	5
	Other (specify)	• • • • • • • • • • • • • • • •	6

	Mark	(X)	this	box	if	you	attach	a	continuation	sheet
·		<b>\</b> /				,		_	• • • • • • • • • • • • • • • • • • • •	

Bags	• • • • • • • • • • •	1
Boxes	• • • • • • • • • • • •	2
Free standing tank cylinders	• • • • • • • • • • •	3
Tank rail cars	• • • • • • • • • • •	4
Hopper cars	• • • • • • • • • • •	5
Tank trucks	• • • • • • • • • •	6
		_
h If the listed substance is transported in pressurized tank cyl		
	N/A	mmHg
agin tracks viving the second		
•		
·		
b	Free standing tank cylinders  Tank rail cars  Hopper cars  Tank trucks  Drums  Other (specify)  If the listed substance is transported in pressurized tank cyl cars, or tank trucks, state the pressure of the tanks.  Tank cylinders  Tank rail cars	Free standing tank cylinders  Tank rail cars  Hopper cars  Tank trucks  Drums  Pipeline  Other (specify)  If the listed substance is transported in pressurized tank cylinders, tank

of the mixture, the average percent com amount of mixture p	If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.							
] Trade Name	Supplier or Manufacturer	Average % Composition by Weight (specify ± % precision)	Amount Processed (kg/yr)					
N/A *	N/A	N/A	N/A					
* Material list	ed bought in pure form.							
* Material listo	ed bought in pure form.							
* Material listo	ed bought in pure form.							
* Material listo	ed bought in pure form.							
* Material listo	ed bought in pure form.							
* Material list	ed bought in pure form.							
* Material list	ed bought in pure form.							
* Material list	ed bought in pure form.							

[\_] Mark (X) this box if you attach a continuation sheet.

3.05 CBI	reporting year in the for	listed substance used as a mof a class I chemical, class by weight, of the listed subs	ss II chemical, or polymer, and
ا <u></u>		Quantity Used (kg/yr)	<pre>% Composition by Weight of Listed Sub- stance in Raw Material (specify ± % precision</pre>
	Class I chemical	N/A	N/A
	Class II chemical	N/A	N/A
	Polymer	19200	60
	- · · · · · · · · · · · · · · · · · · ·	·	

	,	BUVCTCAI	/CUPMICAL	PROPERTIES
CECTION	4	DHYSII'AI.	/CREMICAL	PRUPERILES

General Instru	uci	ti	ons	:
----------------	-----	----	-----	---

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other

PART	A PHYSICAL/CHEMICAL DAT	ra summary		
4.01 CBI	Specify the percent pur substance as it is many substance in the final import the substance, or	ufactured, imported, o product form for manu	r processed. measure facturing activities,	at the time you
		Manufacture	Import	Process
	Technical grade #1	N/A % purity	N/A % purity	
	Technical grade #2	N/A % purity	N/A % purity	N/A % purit
	<sup>1</sup> Major = Greatest quan	tity of listed substan		ted or processed.
4.02	1 Major = Greatest quan Submit your most recen substance, and for eve an MSDS that you devel version. Indicate whe	tity of listed substan	ce manufactured, impor afety Data Sheet (MSDS ing the listed substan	ted or processed.  ) for the listed ce. If you posses urce, submit your
4.02	1 Major = Greatest quan Submit your most recen substance, and for eve an MSDS that you devel version. Indicate whe appropriate response.	tity of listed substantly updated Material S ry formulation contain oped and an MSDS devel ther at least one MSDS	ce manufactured, impor afety Data Sheet (MSDS ing the listed substan oped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you posses urce, submit your circling the
4.02	1 Major = Greatest quan Submit your most recen substance, and for eve an MSDS that you devel version. Indicate whe appropriate response. Yes	tity of listed substantly updated Material Sry formulation contain oped and an MSDS development at least one MSDS	ce manufactured, impor afety Data Sheet (MSDS ing the listed substan oped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you posses urce, submit your circling the
4.02	1 Major = Greatest quan  Submit your most recen substance, and for eve an MSDS that you devel version. Indicate whe appropriate response.  Yes	tity of listed substantly updated Material S ry formulation contain oped and an MSDS developed at least one MSDS	ce manufactured, impor afety Data Sheet (MSDS ing the listed substan oped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you posses urce, submit your circling the
4.02	1 Major = Greatest quan Submit your most recen substance, and for eve an MSDS that you devel version. Indicate whe appropriate response. Yes	tity of listed substantly updated Material Sry formulation contain oped and an MSDS developed at least one MSDS	ce manufactured, impor  afety Data Sheet (MSDS) ing the listed substan oped by a different so has been submitted by	ted or processed.  ) for the listed ce. If you posses urce, submit your circling the

4.03	Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.
	Yes
4.04	For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity

4.04 For each activity that uses the listed substance, circle all the applicable number(s corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

		Phy:	sical State		
Activity	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	. 1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	3	4	5
Store	1	2	3	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

Dust						Dispose	
	<1 micron		-	N/A*		<del></del>	···
	1 to <5 microns		<del></del>	N/A			
	5 to <10 microns			N/A			<u></u>
Powder	<1 micron			N/A	•		
	1 to <5 microns			N/A			
	5 to <10 microns	·		N/A			
Fiber	<1 micron			N/A			
	1 to <5 microns			N/A			
	5 to <10 microns			N/A			
Aerosol	<1 micron			N/A			<del></del>
	1 to <5 microns			N/A	,		
	5 to <10 microns			N/A			

Material Safety Data Sheet

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Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

		•			•
Section I					
73 Prepolymer (MS 2181051)					
Chemical Name Methylene Diisocyanate Prepolym	er	Emergency Teleph (816) 997	none Number 7-2474	,	
Date Prepared 5-27-88	·-	Telephone Numbe (816) 997	r for Information 7–3100		
Chemical Family Aromatic Isocyanate		Synonyms Mythylene	bio-Phenyl Is	socyanate P	repolymer
Formula (C <sub>15</sub> H <sub>16</sub> N <sub>2</sub> O <sub>2</sub> (C <sub>4</sub> H <sub>8</sub> O) <sub>n</sub> H <sub>2</sub> O) <sub>x</sub>	——————————————————————————————————————	Cas # 9048-58-2			
Section II — Hazardous Ingredients	s/Identity	Information			
Hazardous Components (Specific Chemical Identity; Common	Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional)
Methylene bis-phenyl isocyanate	(MDI)	101-68-8	0.005 ppm		20-24
Isocyanate terminated co-		9048-58-2	N.E.*		
polymer of a polyether polyol as	nd MDI				
					•
		Ald .			
		· · · · · · · · · · · · · · · · · · ·			
				·	
					<u> </u>
Section III — Physical/Chemical Ch	aracteris	tics			
Boiling Point	N.E.	Specific Gravity (H	l <sub>2</sub> O = 1)		1.2
Vapor Pressure (mm Hg.)	N.E.	Melting Point			Approx. 25°
Vapor Density (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)			N.E.
Solubility in Water	Reacts	Percent Volitiles B	y Volume		Nil
Appearance and Odor Clear, yellowish liquid with mil	Ld odor.				· · · · · · · · · · · · · · · · · · ·
Section IV — Fire and Explosion H	azard Da	ita 💯 🚈 🐔			9 - 4 L + L 4 L
Flash Point (Method Used) 227°C (COC)		Flammable Limits		N.E.	N.E.
Extinguishing Media Water spray, ${\rm CO}_2$ , foar	n, dry cl	hemical			
Special Fire Flighting Procedures Firefighters should wear self-co	ontained	breathing ap	paratus.		

Ususual Fire and Explosion Hazards Combustion or excessive heat generates irritating and hazardous fumes, smoke, and

isocyanate vapors.

The information contained herein is supplied by Allied-Signal Inc., Bendix Kansas City Division, in the performance of its Prime Contract No. DE-ACQ4-75-DP00613 with the United States Department of Energy and is based on tests and information which we believe to be reliable. However, neither Bendix nor the Government makes any guarantee and no warrantity is expressed or implied with respect to the accuracy and completeness of these data or the results to be obtained from the use thereof. The data herein reliate to the specific material designated herein and do not relate to use in combination with any other material or in any process. Neither Bendix nor the Government assumes any responsibility for loss or injury to the user or third parties proximately arising out of the material or data herein or the use thereof, it is responsibility of the user to determine the toxicity, suitability and best precautions necessary for the sale handling and use of this product for its application.

Information provided herein is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purposes.

Section: V	- Reactivi	ty. Da	ta		The second second	447
tability .	Unstable	Ì	Conditions to Avoid	ssive heat (	(above 275 <sup>0</sup> )	
	Stable	Х		ASTVE MEAL	AUUVE 111	
compatibility (Mat Stron	g bases a	nd w	ater, alcohols,	amines, org	anometallics, and active	
	ള്ളിൽ of Bygradia CO, TDI v		s, traces of HC	N and NO		
izardous	May Occur	Ī			y with water to form CO,	
nymenzanom	Will Not Occur	X	<del></del>		ntainer to explode.	
Section V	- Health	Hazar	d Data			F
ute(s) of Entry:		nalation? Yes		Skin? es	Ingestion?	24
aith Hazards (Ad	cute and Chronici				Yes	
		ure	may cause aller	gic respirat	ory reaction in sensitiz	ed
indiv	iduals.					
arcinogenicity:	Å	es es		ARC Monographs? Yes	OSHA Regulated?	
<u> </u>	ed by Exposure A		•		ers, skin allergies, ecz	
at le ATTEN	ast 15 mi TION. Ski	nute: n, w	s. For inhalati ash with soap a	on, remove f nd water.	ic until vomitus is clea act, flush with water fo rom area. OBTAIN MEDICAL	r
			or Safe Handling ar			
Clean	up crew m	ust	wear appropriat	e respirator	y protection in addition I and cover with oil-abs	to
					nia/ethylene glycol solu	
Sweep						
	se in com	plia	nce with local,	state, and	federal environmental	
•	ations.	and Charie				
Store	indoors	in u	dopened contain	ers at 10-3	5°C. Protect from excess iner is not used at one	ive
repla	ce outage	with	h dry inhert at	mosphere (dr	y nitrogen recommended).	<u> </u>
er Precautions Trans	portation	(D.	O.T.): Toluene		e; Poison B; UN 2078;	
			Label:	Poison; Fla	sh Point: 227 °C.	
			sures			Selve Est
spiratory Protection	on (Specify Type)	Per :	29 CFR 1910.134	(c), ANSI Z	88.2-1980 and recommende	d t
tilation	e by the Local Exhaust Require	resp.	irator manutact	<u>urer based o</u>	n ingredients and vapor t/min. recommended	con
	Mechanical (Gener Recomme			Other N. E.	*	—
tective Gloves	s to ingr		nts		goggles/face shield	
er Protective Clo	othing of Equipment	1			J. 03,	-
XX No	ecessary	to pr	revent skin con ith chemicals.	tact.		
auuaru :	rot dearr	HK W	rtu chemicais.			

### **Bendix**

### Allied Signal

# 3 1

Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

### **Material Safety Data Sheet**

Aromatic Isocyanate	
Chemical Family	Synonyms
Podry propagalisocyanate 5-27-88	Telephone Number for Information (816) 997-3100
Chemical Name Toluene Diisocyanate Prepolymer/Polyme	Emergency Telephone Number thylenie (816) 997-2474
BKC 4002 Series, Component T (MS 21704	00-403, and 409)
IDENTITY (As Used on Label and List)	

Hazardous Components (Specific Chemical Identity; Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional
Toluene diisocyanate (TDI)	26471-62-5	0.005 ppm		13-14
Isocyanate terminated copolymer of a	709729-83-8	N.E.*		8-9
polyester polyol and TDI				
Polymethylene Polyphenyl isocyanate	9016-87-9	0.02 ppm		77-79
				-

Boiling Point @ 760 mm Hg	235°C	Specific Gravity (H <sub>2</sub> O = 1)	1.2
Vapor Pressure (mm Hg.)	255 0	Melting Point	1.2
@ 25°C	<0.01		N.E.
Vapor Density (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water	Reacts	Percent Volitiles By Volume	Ni1

Dark brown liquid with pungent odor.

Flash Point (Method Used) 132°C (COC)	Flammable Limits	N.E.	UEL N.E.
Extinguishing Media Water spray, CO <sub>2</sub> , foam, dry	chemical		
Special Fire Flighting Procedures 'irefighters should wear self-contained			

Ususual Fire and Explosion Hazards

Combustion or excessive heat generates irritating and hazardous fumes, smoke and

isocyanate vapors.

The information contained herein is supplied by Allied-Signal Inc., Bendix Kansas City Division, in the performance of its Prime Contract No. DE-ACO4-76-DP00613 with the United States Department of Energy and is based on tests and information which we believe to be reliable. However, neither Bendix nor the Government makes any guarantee and no warrantly is expressed or implied with respect to the accuracy and completeness of these data or the results to be obtained from the use thereof. The data herein reliate to the specific material designated herein and do not relate to use in combination with any other material or in any process. Neither Bendix nor the Government assumes any responsibility for loss or injury to the user or third parties proximately arising out of the material or data herein or the use thereof. It is responsibility of the user to determine the toxicity, suitability and best precautions necessary for the safe handling and use of this product for its application.

. Proposition in the experimental and experimental resolutions and the contract of the contrac

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KCD-2392 (2/87) BENDIX KANSAS CITY DIVISION

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Section: V	— Reactivit	y Da	talistics of the				
Stability	Unstable		Conditions to Avoid	001	neat (above	27501	
	Stable	Х		SSIVE	ear tanove	2/3-)	
compatibility (Ma	terials to Avoid)	nd w	ter, alcohols,	amine	Organome	talliaa a	ad assets
zardous/Dedom	paster of symbolici	ynas		***************************************		Lailies, a	nd active
zardous	May Occur	apor	Goodifions to Avoid				
olymerization	Will Not Occur	+x	This material	reacts	slowly with	n water to	form CO <sub>2</sub> .
Section V	l Hoolth I		This could cau	se sea.	red contain	er to expl	ode.
oute(s) of Entry:	ſ — Health I			Skin2			
aalth Hazards (A	cute and Chronici	lation? Les		Skin? es		ingestion? Yes	
Repea	ted exposi	ire i	ay cause aller	gic res	piratory re	eaction in	sensitized
indiv	iduals.					,	
rcinogenicity:	NIF	? S	i	ARC Monogra	phs?	OSHA Regulated	?
	•						
ns and Sympton	ns of Exposure.	•		_			
			ncentrations o			headache,	coughing,
		nchi	al spasm, or p	ulmonar	y edema		
dical Conditions nerally Aggravati	ed by Exposure As	thma	, other respir	atory d	isorders, s	kin aller	zies, eczema
				•			
ergency and Fin	st Aid Procedures f	SWa	llowed, admini	ster an	emetic unt	il vomitus	i is clear
at le	<u>w with mil</u> ast 15 min	k ar	llowed, adminid mild cathart For inhalati	ic. Eye	contact, f	lush with	water for
111 1 111	IION. SKII	, wa	sh with soap a	nd wate	r.	ea. Oblair	MEDICAL
Section V	I — Precaut	ion fo	r Safe Handling an	d Use			
Clean	n Case Material is R up crew mu	leleased LSC W	or Spilled ear appropriat	e respi	ratory prot	ection in	addition to
areha	ro breven		rect contact.	contain	spill and	cover with	oil-absorb
Sweep	up.	4112	e with dilute	<del>s que ous</del>	-ammonia/et	hylene gly	col solution
ste Disposal Me	thod	lian	ce with local,	etato	and fadors	1	
regula	ations.		cc with local,	State,	and redera	I environ	lental
cautions to Be	Taken in Handling ap	d Storing	opened contain	1			
heat a	and moisty	n un	If entire contains	ers at	10-35°C. P	rotect fro	m excessive
герта	ce outage	with	dry inhert att	ospher	e (dry nitr	ogen recon	mended).
Transı	portation	(D.O	.T.): Toluene		yanate; Poi		
			Label:	Poison	; Flash Poi	nt: 132 °C.	
	II — Control						
piratory Protection	on (Specify Type) p	er 2	9 CFR 1910.134 rator manufactu	(c), A	NSI Z88.2-1	980 and re	commended to
to use	by the r  Local Exhaust  Required	<u>espi</u>	rator manufacti	rer ba	sed on ingr	edients an	d vapor con-
						recommend	centration.
itective Gloves	Mechanical (General Recommen				N <sup>er</sup> . E.		
	to ingre	dien	ts	EAC KISE	rcal goggle	s/face shi	eld
KX Ne	othing of Equipment Ecessary t	o pr	event skin cont	act.			
k Hygiene Pract andard i	ces for dealin	g wi	th chemicals.				

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## **Material Safety Data Sheet**



Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

Chemical Name		Emergency Telepho			289998)
Toluene Diisocyanate Prepoly Date Prepared	mer	(816) 997-			
5-26-88		(816) 997-			
hemical Family Aromatic Isocyanate			diisocyanate	e methyl-(pr	epolymer o
omula		Cas # 70729-83-8			
Section II — Hazardous Ingred	ients/Identity	Information			
lazardous Components (Specific Chemical Identity; Co	ommon Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional)
Toluene diisocyanate (TDI)		26471-62-5	0.0005 pp	m	63.5
Isocyanate terminated co-		70729-83-8	N.E.*		36.5
polymer of a ployester					
polyol and TDI					
					•
					•
•				•	
				•	
				•	
Section III — Physical/Chemica	ıl. Characteri				
Section III — Physical/Chemica	nl. Characteri	Specific Gravity (H	O = 1)		1.1
Boiling Point  @ 760 mm Hg	113°C	Specific Gravity (H	O = 1)	-	
Boiling Point @ 760 mm. Hg	113°C	Specific Gravity (H.  Melting Point  Evaporation Rate	O = 1)	·	N.E.
Point @ 760 mm Hg  /apor Pressure (mm Hg.) @ 25°C  /apor Density (AIR = 1)	113°C	Specific Gravity (Handler Melting Point		•	
Appor Pressure (mm Hg.)  @ 25°C  /apor Density (AIR = 1)	113°C <0.01 6 Reacts	Specific Gravity (Hamiltonian Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By		-	N.E.
/apor Pressure (mm Hg.) @ 25°C /apor Density (AIR = 1)	113°C <0.01 6 Reacts	Specific Gravity (Hamiltonian Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By			N.E.
Goiling Point  @ 760 mm Hg  /apor Pressure (mm Hg.) @ 25°C  /apor Density (AIR = 1)  Solublity in Water  Appearance and Odor Yellowish, clear liquid with	113°C <0.01 6 Reacts h pungent o	Specific Gravity (His Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By			N.E.
de 760 mm Hg  /apor Pressure (mm Hg.) @ 25°C  /apor Density (AIR = 1)  Solublity in Water  Appearance and Odor Yellowish, clear liquid with  Section IV — Fire and Explosi	113°C <0.01 6 Reacts h pungent o	Specific Gravity (His Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By		LEL N.E.	N.E.
Goiling Point  @ 760 mm Hg  /apor Pressure (mm Hg.)	113°C <0.01 6 Reacts h pungent o on Hazard [	Specific Gravity (H.  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By  dor  Data  Flammable Limits		1	N.E. N.E. Nil
Goiling Point  @ 760 mm Hg  /apor Pressure (mm Hg.) @ 25°C  /apor Density (AIR = 1)  Solubility in Water  Appearance and Odor Yellowish, clear liquid with  Section IV — Fire and Explosi  Flash Point (Method Used)  143°C (COC)  Extinguishing Media  Water spray, CO2,  Special Fire Flighting Procedures	113°C <0.01 6 Reacts h pungent o on Hazard [	Specific Gravity (Hamiltonia)  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By  dor  Data  Flammable Limits  chemical	/ Volume	1	N.E. N.E. Nil
(2 760 mm Hg  (2 760 mm Hg  (2 760 mm Hg  (2 25°C  (2 25°C  (2 25°C  (3 25°C  (3 25°C  (4 25°C  (4 25°C  (5 2 25°C  (5 2 25°C  (5 2 25°C  (6 2 25°C  (6 2 25°C  (7 2 25°C  (7 2 25°C  (8 25°C	113°C <0.01 6 Reacts h pungent o on Hazard [	Specific Gravity (Hamiltonia)  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By  dor  Data  Flammable Limits  chemical	/ Volume	1	N.E. N.E. Nil
Goiling Point  @ 760 mm Hg  /apor Pressure (mm Hg.) @ 25°C  /apor Density (AIR = 1)  Solubility in Water  Appearance and Odor Yellowish, clear liquid with  Section IV — Fire and Explosi  Flash Point (Method Used)  143°C (COC)  Extinguishing Media  Water spray, CO2,  Special Fire Flighting Procedures	113°C <0.01 6 Reacts h pungent o on Hazard [	Specific Gravity (Hamiltonia)  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By  dor  Data  Flammable Limits  chemical	/ Volume	1	N.E. N.E. Nil

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Information provided herein is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purposes.

Section V	- Reactivit	y: Da	asa figuralization and the		To the state of th		
Stability	Unstable		Conditions to Avoid	andre bas	t (ahove 27	F 0 \	
	Stable	X	, x.r.e	SSIVE NEA	CAROVE ZZ	<b></b>	
ncompatibility (Mai Stron	g bases ar	ıd wa	ater, alcohols,	amines,	organometal	lics, and	active
	ള്ളിൽ നെയ്യുള്ളിൽ CO, TDI va		, traces of HC	N and NO.		-	
lazardous Polymerization	May Occur	T	Conditions to Avoid This material		owly with w	ater to fo	rm CO.
	Will Not Occur	Х	This could cau				
Section V	- Health F	azar	d Data				
loute(s) of Entry:		ation?		Skin? e s	l <sub>i</sub>	ngestion? Y e s	
leaith Hazards (Ad							
Repea	ted exposu	re r	nay cause aller	gic respi	ratory reac	tion in se	nsitized
indiv	iduals.						
•					****		
arcinogenicity:	NTP Y e	? :S	V	ARC Monographs?	C	SHA Regulated?	
ons and Sympton	ns of Exposure						
Expos	ure to hig	h co	oncentrations of	f vapor ca	in cause hea	dache, co	ughing;
bronc	hitis, bro	nchi	ial spasm, or pu	ulmonary e	edema		
edical Conditions	ad by Exposure AS	thma	, other respira	atory disc	orders, ski	allergie	s. eczema.
			<del>_</del>				
ATTEN' Section*V  Section*V  Leps to Be Take Clean  Steps  mater Sweep	TION. Skin  Precaul  Case Material is R  up crew mu  to preven  ial. Neutr  up.	OTHER	allowed, administed mild catharts. For inhalations with soap at the soap at th	e respirat	cory protect	cion in adver with o	dition to il-absorbe
Dispos	se in comp ations.	liar	ice with local,	state, an	d federal e	environmen	tal
recautions to Se Store heat repla	Taken in Handling an indoors i	ne. with		ent of cor mosphere ( diisocyar	itainer is r	ot used a en recomme B; UN 20	t one time
Section VI	U Control	Moo	sures	war and the second	Marie Range Control	Barrier and Carlo	The Control of the Control
				(4)	700 2 100		
to use	e by the r	espi	9 CFR 1910.134 rator manufactu	irer based	on ingreat	ents and v	vapor con-
entilation	Local Exhaust Required				ft/min. re		entration.
	Mechanical (General Recommen	ded	The state of the s	Other N. E	I •	T. (1)	
otective Gloves	s to ingre		ıts		1 goggles/f	ace shield	<u> </u>
ther Protective Clo	othing of Equipment				- 0-00		
ork Hygiene Pract	ices	-	event skin cont	act.			***************************************
andard	for dealin	g wi	th chemicals.				

**Material Safety Data Sheet** 



Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

IDENTITY (As Used on Label and List) BKC 7005 Series, T-Component (MS	3 2170551	-553, 645, 648	3, and 649)	Section and the control of the last de-	ne Salasandera e a calabas y colonia
Chemical Name		Emergency Telephon			
Toluene Diisocyanate Prepolymer Date Prepared		816-997- Telephone Number fo			
5-10-88		816-997-	3100		
Chemical Family		Synonyms	1		
Aromatic Isocyanate Formula		Cas #	diisocyanate	methyl-(p	repolymer of
Analysis (1985) Analysis and An	a Naussan	71342-93	3 <b>–3</b>	(M) (A) (A) (B) (B) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	
Hazardous Components (Specific Chemical Identity; Commor	a'annin d' the Helitair y laigheit i seife, danail aid	CAS #	ACGIH TLV	Other Limits Recommended	% (optional)
Toluene Diisocyanate (TDI)		26471-62-5	0.005ppm		67
Isocyanate Terminated Co-polymer	•	71342-93-3	0.005ppm		33
of a Polyester Polyol and TDI					
	-			,	
	•				
and the second s	n ann ann ann ann an Air Tagail ag a' leann ann an Aireann an Airean	ana ana ana ana ang aga matang ana ang ang ang ang ang ang ang ang	i ogrænik igengar områdensk komingeriet klære	कर्णाक् <b>रस्टर</b> सम्बद्धाः सम्बद्धाः स्थानसम्बद्धाः	
Boiling Point	171°C	Specific Gravity (H₂O	= 1)		1.2
Vapor Pressure (mm Hg.)  less than 0.01		Melting Point			N P +
Vapor Density (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)			N.E.*
Solubility in Water		Percent Volitiles By \	/olume		N.E.
Appearance and Odor	Reacts			• .	Nil
Yellowish, clear liquid with sha	rp, punge	ent odor.	annya ni satiana i Jawa di Jawa ya kamana ya kamana ka	gg (ggleg i registration) og i reter setting og i stelle i som i stelle setting og i stelle i som i stelle set	o consistent mensory explorate consistent see
The state of the s	ragaga (j. 139	The Committee of the Co	atanteena era teor antar en delega fort terrano como ( ) ( ) ( ) ( )	r grane americanis e le celebre ablem e le	A COLOR STATE OF THE STATE OF T
Flash Point (Method Used) 166°C (COC)		Flammable Limits		LEL N.E.	UEL N.E.
Extinguishing Media CO2, foam, dry chemical, water sp	oray.				
Special Fire Flighting Procedures Firefighters should wear self-co		preathing appa	ratus.		
Ususual Fire and Explosion Hazards Combustion or excessive heat gene	erates i	rritating and l	hazardous fur	nes, smoke	

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Information provided herein is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purposes.

KED 2202 /2 871 PENING WATER OF CHEN DIVISION

	*AME SECTION	:	en e	·		
A Company of Section (Company)	A Company of the Comp	i i i	- Wiscon		وهدونه مساعة أنساء أدامه	
Stability	Unstable		Conditions to Avoid		1.2	and the second of the second o
	Stable	Х	Excessive heat (a	bove 275°Q	)	
Incompatibility (Mail Strong base	terials to Avoid) es, water, al	coho	ols, amines, organo	metallics,	and active hy	drogen compounds.
Hazardous Decom	position or Byproducts		of HCN and NO			
Hazardous Polymerization	May Occur		Conditions to Avoid	+11		£ (0)
Polymenzation	Will Not Occur	х	This material reac container, this co			
			a control control and the second control of the second second	and and a large	the container	to exprode.
Route(s) of Entry:	Inhala	tion?	Sk	in?	in	destion?
Health Hazards (A	Yecute and Chronic)			es	Y	es
Repeated	exposure may	cau	se allergic reacti	on in sens	itized individ	uals.
Carcinogenicity:	NTP? Yes		IAF	RC Monographs?	09	SHA Regulated? NO
		,		<del></del>		
Signs and Symptor Exposure	ms of Exposure to high conc	entr	ations of vapor ca	n cause he	adache, coughi	ng. bronchitis.
	l spasm, or p				, , , ,	6, 220
Medical Conditions			other respiratory	disorders	. skin allergi	es. eczema
, 33		<u>_</u>			,	
Emergency and Fir	st Aid Procedures If	swa	llowed, give emetic	until vo	mitus is clear	. Follow with milk
and mild	<u>cathartic</u>	Eye	contact, flush with	water for	r at least 15	minutes. For
	and the second section of the second	Andrea of the second of the	Safe Parading and	er and a read of the second	ON. Skin, was	h with soap and water.
Steps to Be Take in Cleanup	in Case Material is Rei	leased	or Spilled propriate respirato	orv protec	tion in additi	on to stane to
						aterial. Neutralize
			ene glycol solution		*******	1000101
Waste Disposal Me	thod		with local, state,			al regulations.
From exce	Taken in Handling and	Storing T. F	y: 100 lbs. RCRA S Store indoors in tentire content of c	inopened co	ontainers at I	0-35°C. Protect
outage wi	th dry inert	atm	osphere (dry nitrog	en is rec	ommended).	one time, replace
Other Precautions			Toluene Diisocyanat		****	
			Label: Poison; Fl			
•		11111	• • • • • • • • • • • • • • • • • • • •			
Respiratory Protection	on (Specify Type) Pe	r 29	CFT 1910.134(c), A	NSI Z88.2-	-1980 and reco	mmended type to use
as prescr Ventilation	Local Exhaust	resp	<u>irator manufacture</u>	I Special		nd vapor concentration.
	Required  Mechanical (General)			200 Other	ft/min recomme	ended
Protective Gloves	Recommende	d	7	N.E.		
Imperviou	s to ingredi	ents		Chemical	goggles or fac	ce shield.
Necessary Work/Hygiene Pract	to prevent	skin	contact.		·	
Standard	for dealing	with	chemicals.			

# BEST GURY AVAILABLE

Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

## **Material Safety Data Sheet**

Section: I	Santa Carlos Car
BKC 44401 Series, Component T (MS 217	70600-602 and 647)
Chemical Name Toluene Diisocyanate Prepolymer	Emergency Telephone Number (816) 997-2474
Date Prepared 5-26-88	Telephone Number for Information (816) 997-3100
Chemical Family Aromatic Isocyanate	Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer of)
Formula	Cas # 57412-70-1

	107772 70 1			
Section II — Hazardous Ingredients/Identi	ty Information			
Hazardous Components (Specific Chemical Identity; Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional
Toluene diisocyanate (TDI)	26471-62-5	0.005ppm		53
Isocyanate terminated co-	57412-70-1	N.E.*		47
polymer of a polyester				4
polyol and TDI				
				-
		-		, •
			· · · · · · · · · · · · · · · · · · ·	

Section III — Physical/Chemic	al Characterist	ics	
Boiling Point @ 760 mm Hg	>125°	Specific Gravity (H <sub>2</sub> O = 1)	1.2
Vapor Pressure (mm Hg.) @ 25°	0.01	Melting Point	N.E.
Vapor Density (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water	Reacts	Percent Volitiles By Volume	Nil

Appearance and Odor Yellowish, clear liquid with pungent odor

Section IV — Fire and Explosion Hazard Dat	aberile of soften		
Flash Point (Method Used) (COC) Greater than 132°C	Flammable Limits	N.E.	VEL.
Extinguishing Media Water spray, CO <sub>2</sub> , foam, dry chemical			
Special Fire Flighting Procedures Firefighters should wear self-contained b	reathing apparatus.		

Ususual Fire and Explosion Hazards

Combustion or excessive heat generates irritating and hazardous fumes, smoke

and isocyanate vapors.

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KCD-2392 (2/87) BENDIX KANSAS CITY DIVISION

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Stability	Unstable		Conditions to Avoid	يمجيون أسبحدهم	<del>and the land of t</del>	an ang ang ang ang ang ang ang ang ang a	فعصيصا تنجيرها
	Stable						
incompatibility (8)	fata-iola da Austria	<u> </u>	Excessive heat				
	Materials to Avoid) t with stro	ng oxi	dizere				
Hazardous Deco	mposition or Byprodu	cts	dizers.				
CO, Car							
Hazardous Polymerization	May Occur		Conditions to Avoid				
	Will Not Occur	X	N.E				·
क्षेत्रमातात <b>े</b>	ા ાકુલાયો		· · · · · · · · · · · · · · · · · · ·		e anno mercenta preside preside presidente de la composición del composición de la composición de la composición de la composición del composición de la com	the state of the s	
Route(s) of Entry	and the second second second	nalation?	Control of the second s	Skin?	and the state of t	the commence with the commence of the commence	
		les .		Yes		` Ingestion? Yes	
Health Hazards (	Acute and Chronic)	N.E.					
		1.1.					
Carcinogenicity:		P?		ARC Mono	graphs?	OSHA Regulated?	
<del> </del>		No.		No		No	
Signs and Sympt			_				
Urai_rox	iciry relati	vely_	ow. Eye contact	with ]	<u>iquid may ca</u>	use some irritation.	
	e skin irrit	ation					
Medical Condition Generally Aggrav		N.E.					_
Emergency and F quart of	First Aid Procedures milk and mi	If swa	llowed, give an echartic. For eye	metic contac	until yomitu t, wash with	s is clear. Follow w	ith a
water.	Wash skin wi	th soa	p and water.				
Special V	ui = fice-iu	11(i) (ii	r Seite lienelling ei	رة اللاد	A CONTRACTOR OF SECTION AND ASSESSMENT	r o ming grander i de elektronisk de independisjonalist.	
Steps to Be Take	in Case Material is	Released	or Spilled	in called the control of			
Contain a	and cover wi	th oil	. absorbent materi	al. S	weep up. Wa	sh down area with soar	)
and wate	r or appropr	iate s	olvent such as me	thylen	e chloride.	using appropriate pers	sona1
			engineering contro				, ou.z
Waste Disposal N	Method						
Dispose o	of in compli	ance w	ith local, state	and fe	deral enviro	nmental regulations.	
Precautions to Be	Taken in Handling a doors at 10	and Storing	C				
DEUT III	COLD GC 10						
Other Precautions				· · · · · · · · · · · · · · · · · · ·			
		T): [	.O.T. Classificat	ionN	ot Applicable	2	
		F	lash Point: Above	200°C			
ars 1 grade	ाः <u>र्ग्ण्यस्</u> र्वे	1 1,5,627.5	431758	tundelija siki in a armina amenin	grant our company open	to the second	,
	tion (Specify Type)	a namericana inita	i Pigir - NG NG NG Main NG NG NG NG NG MANAMBA NA MANAMBAN, N <mark>A MA</mark> MANAMA NG MANAMBAN NG	بالحار والماهلا علمه	era	v v	
	ldered neces	sary.					
Ventilation	Local Exhaust Not consi	dered	necessarv		Special N.E.		<del></del>
	Mechanical (General	ai)			Other		<del></del>
Protective Gloves	Recommend	ea		Eye Pro	N.E.		
Imperviou	s to ingred	ients		Ch	emical goggle	es or face shield.	
Necessary	Clothing of Equipment to prevent	skin	contact.		-		
Work/Hygiene Pra	ctices						
Standard	for dealing	with	chemicals.				

Page 2



Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

### **Material Safety Data Sheet**

Section I	的复数形式 经收益 医自己性 医神经炎 医自己性性神经炎 医神经炎 医二氏性神经炎
BKC 44402 Series, Component T (MS 217028)	7-290, 326-327, and 647 and SS372373)
Chemical Name	Emergency Telephone Number
Toluene Diisocyanate Prepolymer	(816) 997-2474
Date Prepared 5-26-88	Telephone Number for Information (816) 997-2474
Chemical Family Aromatic Isocyanate	Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer of)
Formula	Cas # 68069-57-4

Section II — Hazardous Ingredients/Identit	y Information			
zardous Components (Specific Chemical Identity; Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional
Toluene diisocyanate (TDI)	26471-62-5	0.005 ppm		65
Socyanate terminated co-	68609-57-4	N.E.*		35
polymer of a polyester				
polyol and TDI				
				•
	·			

Boiling Point @ 760 mm Hg	149°C	Specific Gravity (H <sub>2</sub> O = 1)	1.2
Vapor Pressure (mm Hg.)		Melting Point	
@ 25°C	<0.01		N.E.
Vapor Density (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water		Percent Volitiles By Volume	
•	Reacts		Ni1

Appearance and Odor
Yelowish, clear liquid with pungent odor

Flash Point (Method Used) 152°C (COC)	Flammable Limits	N.E.	N.E.
Extinguishing Media Water spray, CO <sub>2</sub> , foam,	dry chemical		
Special Fire Flighting Procedures Firefighters should wear self-cont	ained breathing apparatus.		

Ususual Fire and Explosion Hazards
Combustion or excessive heat generates irritating and hazardous fumes, smoke and

isocyanate vapors.

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MCD-2392 (2'87) BENDIX KANSAS CITY DIVISION

Stable X Excessive heat (ahove 275°)  Stable X   Incompatibility (Materials to Avoid) Strong bases and water, alcohols, amines, organometallics, and active diazardols/DedoMassible of Symptogenius.  CO2, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  Strong bases and water, alcohols, amines, organometallics, and active diazardols/DedoMassible of HCN and NOx   Incompatibility (Materials to Avoid)  Strong bases and water, alcohols, amines, organometallics, and active diazardols/DedoMassible of HCN and NOx   Incompatibility (Materials to Avoid)  To 2, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  To 2, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  To 2, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  To 2, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  To 2, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   Incompatibility (Materials to Avoid)  To 3, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   To 3, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN and NOx   To 4, CO, TDI vapors, traces of HCN								_
Subse X  Corporation (Manuscan Defended Strong Bases and water, alcohols, amines, organometallics, and active capacity (Manuscan Capacity Bases) bases and water, alcohols, amines, organometallics, and active capacity (CO, TDI vapors, traces of HCN and NO (CO, TDI vapors, traces of HCN and NO (CO, TDI vapors, traces of HCN and NO (CO) (CO, TDI vapors, traces of HCN and NO (CO) (CO, TDI vapors, traces of HCN and NO (CO) (CO, TDI vapors, traces of HCN and NO (CO) (CO) (CO) (CO) (CO) (CO) (CO) (CO	Section V	- Reactivit	y Dat	akiti, ku u u ji iliyo		Maria May a sa		
Same   X    Torographicly Measures be rived    Strong bases and water, alcohols, amines, organometallics, and active surpression    Strong bases and water, alcohols, amines, organometallics, and active surpression    Strong bases and water, alcohols, amines, organometallics, and active surpression    Was Not Come   Thirs Markilal reacts slowly with water to form CO2.  Section VI — Health Hazard Data  Domest of firm;	Stability	Unstable				hant (-1 076	.0、	
Strong bases and water, alcohols, amines, organometallics, and active unarchooles, may occur and active unarchooles, may occur and the property of the propert		Stable	х	- NCPS	RIVE	iear (above //-	<u> </u>	
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# 3 1

Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

# **Material Safety Data Sheet**

BKC 44403 Series, Component T (MS 2170505-507 and 509)  Chemical Name Toluene Diisocyanate Prepolymer  Date Prepared 5-26-88 Chemical Family Aromatic Isocyanate  Formula  Cas #  Emergency Telephone Number (816) 997-2474  Telephone Number for Information (816) 997-3100  Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer	Section 1	
Toluene Diisocyanate Prepolymer  (816) 997-2474  Telephone Number for Information (816) 997-3100  Chemical Family Aromatic Isocyanate  Formula  (816) 997-2474  Telephone Number for Information (816) 997-3100  Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer	BKC 44403 Series, Component T (MS 2170	
5-26-88 (816) 997-3100  Chemical Family Aromatic Isocyanate Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer	Chemical Name Toluene Diisocyanate Prepolymer	Emergency Telephone Number (816) 997-2474
Chemical Family Aromatic Isocyanate  Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer  Formula  Cas **	•	
Formula Cas #	Chemical Family Aromatic Isocyanate	Synonyms
7010 10-7	Formula	Cas # 9016-16-7

Section II - Hazardous Ingredients/Identit	v Information	San Jan Jan Baran		Service State
lazardous Components (Specific Chemical Identity, Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (options
Toluene diisocyanate (TDI)	26471-62-5	0.005 ppm		63
Isocyanate terminated co-	9016-16-7	N.E.*		37
polymer of a polyester				
polyol and TDI				<del></del>
•				
	·			

Boiling Point		Specific Gravity (H <sub>2</sub> Q = 1)	
@ 760 mm Hg	>135°C	Specific Gravity (M2O = 1)	1.2
Vapor Pressure (mm Hg.) @25°C	<0.01	Melting Point	N.E.
Vapor Density (AIR ≈ 1)	6	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water		Percent Volitiles By Volume	
	Reacts		Ni1

Appearance and Odor Yellowish, clear liquid with pungent odor.

Flash Point (Method Used) 132°C (C	OC)	Flammable Limits	N.E.	VELN.E.
Extinguishing Media Water spray	, CO <sub>2</sub> , foam,	dry chemical		_L

Ususual Fire and Explosion Hazards
Combustion or excessive heat generates irritating and hazardous fumes, smoke and

isocyanate vapors.

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Section V	– Reactivii	y Dai	ta i iĝis en jele ji o			
Stability	Unstable		Conditions to Avoid		( ) 07.0	
	Stable	X	KXC PS	ISIVE hear	(above 275°)	· · · · · · · · · · · · · · · · · · ·
Incompatibility (Ma	ig bases a	nd wa	ater, alcohols,	amines, o	organometallics,	and active
	西納奇 企到斯勒氏 CO, TDI v		, traces of HCN	and NO_		
Hazardous Polymerization	May Occur			X	wly with water t	o form CO.
	Will Not Occur	X			container to exp	
Section V	I — Health I	lazar	d Data			
Route(s) of Entry:	inh	lation? Yes	.Sk Y e	cin?	Ingestion?	
Health Hazards (A Repea	cute and Chronici				atory reaction i	n sensitized
indiv	iduals.					
		-				
Carcinogenicity:	ŊŢ	? 2.S	IAI	RC Monographs?	OSHA Regul	ated?
Signs and Sympton	ms of Exposure ure to his	gh co	oncentrations of	vapor ca	n cause headache	coughing,
bronc	hitis, bro	nchi	.al spasm, or pu	lmonary e	dema	
Medical Conditions Generally Aggraval	ed by Exposure As	thma	, other respira	tory diso	rders, skin alle	rgies, eczema.
•		•				
Emergency and Fin Follo	rst Aid Procedures[f w with mi]	swa k an	llowed, adminis d mild catharti	ter an em	etic until vomit ntact, flush wit	us is clear.
at le	ast is mir	iutes	. For inhalationsh with soap an	n. Temove	from area. OBTA	IN MEDICAL
			or Safe Handling and			
Steps to Be Take Clean	in Case Material is F up crew mu	eleased LS C W	or Spilled Year appropriate	respirat	ory protection i	n addition to
steps	to prever	it di	rect contact. C	ontain sp	ill and cover wi	th oil-absorbent
Sweep	up.		- With dilute 2	<del>queous am</del>	monis/ethylene g	lycol solution.
		lian	ce with local.	state. an	d federal enviro	nmental
regul	ations.					
Precautions to Be Store	Taken in Handling at	d Storing	opened containe	rs at 10	-35°C. Protect f	rom excessive
heat	and moist	me.	It entire conte	nt of con	tainer is not us dry nitrogen rec	ed at one time.
Other Precautions	portation	(D.0	.T.): Toluene		ate; Poison B; U	
	•		Label:		lash Point: 135	
Section V	III — Control	Mea	sures			
Respiratory Protecti	on (Specify Type) P	er 2	9 CFR 1910.134	(c), ANSI	Z88.2-1980 and	recommended type
Ventilation	Local Exhaust	espi	rator manufactu	rer based	on ingredients	and vapor con-
	Required  Mechanical (Genera  Recommen			Other E	ft/min. recomme	naea
Protective Gloves	s to ingre		ts		· 1 goggles/face s	hield
Other Protective Cl	othing of Equipment				- 0000+03/1406 3	
Work/Hygiene Prac	ecessary t	o pr	event skin cont. th chemicals.	act.		
brandard	ror dealin	g wi	tn cnemicals.			

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### **Material Safety Data Sheet**

Section Ideal and the section Ideal and Ideal	the Company of the control of the Co
IDENTITY (As Used on Label and List)  BKC 44404 Series, Component T (MS217)	0245)
Chemical Name Toluene Diisocyanate Prepolymer	Emergency Telephone Number (816) 997-2474
Date Prepared 5-26-88	Telephone Number for Information (816) 997–3100
Chemical Family Aromatic Isocyanate	Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer of
Formula	Cas * 68609-57-4

Toluene diisocyanate (TDI)	26471-62-5	0.00	 
	207/1-02-3	0.005 ppm	60
Isocyanate terminated co-	68609-57-4	N.E.*	35
polymer of a polyester			
polyol and TDI			
Trichlorotrifluoroethane	76-13-1	N.E.	5

Section III — Physical/Chemic	cal Characteristi	cs.	
Boiling Point @ 760 mm Hg	149°C	Specific Gravity (H <sub>2</sub> O = 1)	1.1
Vapor Pressure (mm Hg.) @ 25° C	<0.01	Melting Point	N.E.
Vapor Density' (AIR = 1)	6	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water	Reacts	Percent Volitiles By Volume	Ni1

Yellowish, clear liquid with pungent odor

Flash Point (Method Used) 152°C (COC)	Flammable Limits		LEL N.E.	VEL N.E.
Extinguishing Media Water spray, CO <sub>2</sub> , foam,	dry chemical	·		
Special Fire Flighting Procedures Firefighters should wear self-cont	gained breathing apparatus			

Ususual Fire and Explosion Hazards
Combustion or excessive heat generates irritating and hazardous fumes, smoke and

isocyanate vapors.

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Sections	Reactivii	y Dat	a . V					
Stability	Unstable		Conditions to Avoid					
	Stable	1						
acomposibiles (A.C.		X	Excessive heat				-	
ncompatibility (Ma	Merials to Avoid) t with stron	g oxi	dizers.					
Hazardous Decom	position or Byproduct	s						
CO , Carl	May Occur	1	Conditions to Avoid					
Polymerization	May Occur		Conditions to Avoid					
	Will Not Occur	X	N.E.					
Sectional	/I⊧ <sup>©</sup> ⊰Health <b>£</b> I			71.35			4	
Poute(s) of Entry:	Are 100 10 10 10 40 110 140	lation?	11. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	in?	er. er Kat.		Ingestion?	
		es	Y	es			Yes '	
Hearn Hazards (A	Acute and Chronic) N	.E.						
				-		<del></del>		
Carcinogenicity:	NTS N			RC Monograph	ns?		OSHA Regulate	d?
	19	<u> </u>		10			NO	
Name and Supplie	6			<del></del>				
Signs and Sympton Oral toxi	•	velv	low. Eve contact w	rith lia	uid	mav cause :	some irrit	ation.
	•	•	•					
May cause Aedical Conditions	e skin irrit. s	ation						
		N.E.						
•				•				
mergency and F	irst Aid Procedures	If sw	allowed, give an em thartic: For eye c	etic uni	til	vomitus is	clear. F	ollow with a
quart of	milk and mi	Id ca	thartic: For eye c	ontact,	was	h with cop:	lous quant	itles of
			ap and water.					
Section: V	/IL — Precaul	ion fo	or Safe Handling and	l Use∗ i				
iteps to Be Take	in Case Material is I	Released	or Spilled			2-44 W 104 10 10 10 10 10 10 10 10 10 10 10 10 10	A	
Contain a	and cover wi	th oi	l absorbent materia	1. Swee	ep·u	p. Wash do	own area w	ith soap
and water	r or appropr	iate	solvent such as met	hylene o	ch1o	ride, using	g appropri	ate personal.
protectiv	ze equipment	and	engineering control	S.				
Vaste Disposal M	lethod							. •
Dispose o	or in compli-	ance v	with local, state a	nd reder	ral	environment	tal regula	tions.
	Taken in Handling a	-d 60a-i-						
Store ind	loors at 10	to 35	<sup>3</sup> c					
Mer Precautions						_		
Transport	ation (D.O.		0.0.T. Classificati		App	licable		
			Flash Point: 220°C					
Section V	/III — Contro	t: Mea	sures		7.4			
lespiratory Protec	tion (Specify Type)		· · ·	*	-			
	dered neces	sary.		16		***************************************		
'entilation	Local Exhaust Not consid		necessary	Sp	ecial	N.E.		
	Mechanical (Genera	2/)		Ott	1 <del>e</del> r	N.E.		
'netrective Gloves	Recommend			Eye Protection	on		-	
Imperviou	is to ingred: Clothing of Equipment	ients		Chemi	<u>ical</u>	goggles or	face shi	eld.
Necessary	to prevent	skin	contact.					
Hank/Hygiene Pra	ctices for dealing							
_DIEDURES_	TOT DESTINE	WILL	CHEMICAIS.					



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and to consider the substitution of the substi

## **Material Safety Data Sheet**

Section-I						
IDENTITY (As Used on Label and List)						
BKC 45301 Series, Component T (M	S 2170658)	I Emanana Talahan	<b>A</b>			
		Emergency Telephone Number (816) 997-2474				
Date Prepared 5-27-88		Telephone Number for Information (816) 997–3100				
Chemical Family Aromatic Isocyanate		Synonyms				
Formula		Cas #			· · · · · · · · · · · · · · · · · · ·	
Section II — Hazardous Ingredient	s/Identity Ir	formation				
Hazardous Components (Specific Chemical Identity; Commo		CAS #	ACGIH TLV	Other Limits Recommended	% (optional)	
Polymethylene Polyphenylisocyana	te	9016-87-9	0.005 ppm		79-81	
Toluene diisocyanate		26471-62-5	0.005 ppm		19-21	
-			The state of the s		17 21	
				······································		
		4/4				
			·			
•		•				
	•					
Section III   Bhysical/Chamical Ch	- crostoriotic				and the state of	
Section III — Physical/Chemical Chemical Chemica	iaracteristic					
Boung Fork	N.E.*	Specific Gravity (H <sub>2</sub> O :	- 1)		1.2	
Vapor Pressure (mm Hg.)	NE	Melting Point				
Vapor Density (AIR = 1)	N.E.	Francisco Bata			N.E.	
Value Delibity (AIT = 1)	N.E.	Evaporation Rate (Butyl Acetate = 1)			N.E.	
Solubility in Water		Percent Volitiles By Vo	olume			
Appearance and Odor	Reacts				Nil	
Dark brown liquid with pungent or	ior.					
Section IV — Fire and Explosion I	lazard Data					
Flash Point (Method Used)	į.	Flammable Limits	···	LEL	VEL	
163°C (COC)				N.E.	N.E.	
Water spray, CO2, for	m, dry che	mical				
Special Fire Flighting Procedures Firefighters should wear self-cor			itus.			
		<u> </u>				
Ususual Fire and Explosion Hazards						
Combustion or excessive heat gene	erates irri	tating and ha	zardous fume	es, smoke a	ınd	
isocyanate vapors.						
The information contained herein is supplied by Allied-Signal Inc., Bendix Kar	sas City Division, in the	performance of its Prime Contr.	act No. DE-ACO4-76-DP00	613 with the United State	es Department of Energy	

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Section V	A Reactivity	/ Da	la		TO THE WALL WAS
Stability	Unstable		Conditions to Avoid EXCESSIVE heat		The state of the s
	Stable	Х			
Incompatibility (Ma	terials to Avoid)	g ox	idizers.		
Hazardous Decom	position or Byproducts				
CO, CO <sub>2</sub> , C	May Occur		Conditions to Avoid Not established		
Polymerization	Will Not Occur	X	Not established		
Section V	i — Health H		d Data		Note: Sales and State of the St
Route(s) of Entry:	inhala Ye	tion?	Skin? Yes		Ingestion?
Health Hazards (A	cute and Chronic)		Liquid eye contact may		
irritation					nay cause skin
Carcinogenicity:	NTP? No		IARC Mono	graphs?	OSHA Regulated?
Signs and Sympto May cause	ms of Exposure eye and/or sl	kin	irritation.		
	2,2 0.0,01 0.				
Medical Conditions Generally Aggravat	ed by Exposure NO1	ne	•		
Emergency and Fin		er a	n emetic until vomitus i	s clear Follow	with milk and a mild
			with clean water. For		
the commence of the second of			r Safe Handling and Use		
Steps to Be Take	n Case Material is Rel	eased	or Spilled th oil-absorbent materia		sh down area with
			appropriate   sonal pro		
controls.					
Waste Disposal Me Dispose in	thod compliance wi	ith 1	local, state, and federa	l environmental re	egulations.
Precautions to Be Use additi	Taken in Handling and onal protect:	Storing Lve 6	equipment to prevent dir	ect contact. Stor	re indoors at
			i be available in the ar		
Other Precautions Transporta	tion: (D.O.T.	.)-No	ot Applicable		
Flash Poin					
	li - Control	Meas	ures		
Mot consid	on <i>(Sperty Type)</i> ered liecessai	ry.			
Ventilation	Local Exhaust Not consider		lecessary	Special N.E.	
	Mechanical (General) Recommended			Other N.E.	
	to ingredier	ıts	Eve Pro Chemi	tection cal goggles/Face s	shield
	to prevent sk	cin c			
Work/Hygiene Pract Standard f	ces or dealing wi	lth c	chemicals.		

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## Material Safety Data Sheet

Section I	
IDENTITY (As Used on Label and List)	
BKC 45302 Series, Component T (MS 2170659)	
Chemical Name	Emergency Telephone Number (816) 997-2474
Date Prepared 5-27-88	Telephone Number for Information (816) 997–3100
Chemical Family	Synonyms
Aromatic Isocyanate	
Formula	Cas #

lazardous Components (Specific Chemical Identity; Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optional
Polymethylene Polyphenylisocyanate	9016-87-9	0.005 ppm		53-54
Coluene diisocyanate	26471-62-5	0.005 ppm		12-14
richlorotrifluoroethane	76-13-1	N.E.*		33-34

Boiling Point	N.E.	Specific Gravity (H <sub>2</sub> O = 1)	1.2
Vapor Pressure (mm Hg.)	N.E.	Melting Point	N.E.
/apor Density (AIR = 1)	N.E.	Evaporation Rate (Butyl Acetate = 1)	N.E.
Solubility in Water	Reacts	Percent Volitiles By Volume	Nil

Dark brown liquid with pungent odor.

	N.E.	N.E.
11		
	al hing apparatus.	

Ususual Fire and Explosion Hazards

Combustion or excessive heat generates irritating and hazardous fumes, smoke and

isocyanate vapors.

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Section. V	- Reactivity	Dat	a.			· 数据的 2000年 5.	
Stability	Unstable -		Conditions to Avoid . Excessive heat			· · · · · · · · · · · · · · · · · · ·	
	Stable	<b>X</b>	.,				
Incompatibility (Ma	· · · · · · · · · · · · · · · · · · ·						
	t with strong position or Byproducts:		idizers.				
co, co,, c		_					
Hazardous Polymerization	May Occur		Conditions to Avoid Not established				
	Will Not Occur	X					
Section V	I — Health Ha	azaro	d Data				
Route(s) of Entry:	Inhala		Skin Yes	?		Ingestic Yes	on?
Health Hazards (A	cute and Chronic)		ow. Liquid eye cont				
		<u>.,</u>	ow. Diquid eye conc	act	lay cause	ittitation.	riay cause
skin irrit	ation.						
Carcinogenicity:	NTP? No			Monog No	raphs?	OSHA	Regulated?
Signs and Sympton							
May cause	eye and/or sl	cin :	irritation.				
Medical Conditions Generally Aggravat		lone					·
							•
Emergency and Fir If swallow	st Aid Procedures ed. administe	er a	n emetic until vomit	us i	clear.	Follow with	milk and a mild
cathartic.			with clean water.				
			or Safe Handling and				
Steps to Be Take	in Case Material is Rel	eased	or Spilled th oil-absorbent mat	USE :		en inglestred to	er gilling i Striffe av grove ageneglingsbij en
methylene	chlroride, us	ing	appropriate protect	ive (	equipment	and engineer	ring controls.
							•
Waste Disposal Me Dispose in	compliance v	vith	local, state, and f	edera	al environ	mental regui	lations.
Precautions to Be Use additi	Taken in Handling and onal protecti	Storing	equipment to prevent	dire	ect contac	t. Store in	ndoors at
			be available in the				
Other Precautions Transporta	tion: (D.O.T.	) – No	ot Applicable				
	t: Above 165°						
Section V	II — Control	Meas	sures			第39字:1800 年底:	
Respiratory Protecti	on (Specify Type)						
Ventilation	ered necessar				Special		
	Not consider	ed 1	necessary	,	Special N.E.		
	Kecom ended				Other.	75 TATE OF THE OWNER	
	to ingredier			Chem:	ection LCal goggl	les/Face shi	elds
Necessary	othing of Equipment to prevent sk	cin (	contact				4:
Standard f	tices or dealing wi	Lth (	chemicals				

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### **Material Safety Data Sheet**

Continue ( iDENTITY (As Used on Label and List)
BKC 45401 Component T Emergency Telephone Number (816) 997 2474 Toluene Diisocyanate Prepolymer Date Prepared Telephone Number for Information 5-26-88 (816) 997-3100 Chemical Family Synonyms Benzene 1,3 diisocyanate methyl-(prepolymer of) Aromatic Isocyanate Formula <sup>c</sup>as<sub>0</sub>\*69-50**-**5 II = liezardous inoredients/dentity information Other Limits Hazardous Components (Specific Chemical Identity; Common Name(s)) ACGIH TLV CAS # % (optional) 26471-62-5 0.005ppm 27 Toluene diisocyanate (TDI) 9069-50-5 N.E. \* Isocyanate terminated co-73 25190-06-1 polymer of a polyether polyol and TDI यितासाम्बारमा (बावानास्य क्षाचित्र में 🚎 Boiling Point Specific Gravity (H<sub>2</sub>O = 1) N.E. 1.1 Vapor Pressure (mm Hg.) Melting Point N.E. N.E. Vapor Density (AIR = 1) Evaporation Rate N.E. (Butyl Acetate = 1) N.E. Solubility in Water Percent Volitiles By Volume Reacts Nil Appearance and Odor Yellowish, clear liquid with pungent N.E. lash Point (Method Used) Flammable Limits LEL N.E. Extinguishing Media Water spray, CO2, foam, dry chemical Special Fire Flighting Procedures Firefighters should wear self-contained breathing apparatus. Ususual Fire and Explosion Hazards Combustion or excessive heat generates irritating and hazardous fumes, smoke, and isocyanate vapors.

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tability	Unstable		Conditions to Avoid	is ser i e 1. diskupiski staniski kunituret u bisku uzgitu servada umi skulu	de la servición y la compresión y a la Secretario estado están están escada de destruto en la constituida de l La compresión de la compresión	<u>ىنىڭىدۇندۇنىدى</u> د بىرە ئا <u>سىيىڭىدۇمۇ، كىن</u> لاتتەدە
	Stable	$-\frac{1}{x}$	E	xcessive heat (a	above 275 <sup>0</sup> )	
compatibility (A	Materials to Avoid)		<u>L</u> .,			
Stro	ng bases	and w	ater, alcoho	ls, amines, orga	anometallics, an	d active
	Mpsssion of eystadi CO, TDI			HCN and NO.		
zardous lymerization	May Occur	Ť			y with water to	form CO
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Will Not Occur	Х	This could	cause sealed cor	tainer to explos	de Corm
324366	VI = Gelli		. The manufacture of the sales		CONTRACTOR OF CONTRACTOR OF THE PROPERTY OF TH	and the second s
ite(s) of Entry		er a la l	The second secon	Ckin?	handle of the second se	
alth Hararde	(Acute and Chronic)	Yes		Skin? Yes	Ingestion?	
Repe	ated expo	sure	may cause al	lergic respirato	ry reaction in	sensitized
indi	viduals.			·		
cinogenicity:	Ŋ	TP? Yes		IABC Monographs?	OSHA Pagulated?	
		res		IARC Monographs? Yes	OSHA Regulated?	
bron	chitis, b				ause headache, o	
			tar spasm, o	r pulmonary edem	la	
lical Condition erally Aggrav	ns rated by Exposure	Asthm.				les. eczem
dical Condition nerally Aggrav	ns vated by Exposure	Asthm			ers, skin allergi	les, eczem
nerally Aggrav	vated by Exposure		a, other res	piratory disorde	ers, skin allergi	· · · · · · · · · · · · · · · · · · ·
erally Aggravers	rated by Exposure A First Aid Procedures OW With mi	If swa	a, other res	piratory disorde	c until vomitus	is clear.
ergency and Foller at 1 ATTE	First Aid Procedures OW with mi east 15 m NTION. Ski	lf swallk and in the same of t	allowed, admind mild catholic for inhalash with soa	piratory disorde inister an emeti artic. Eye conta ation, remove fr p and water.	ers, skin allergi	is clear.
ergency and Follatin	First Aid Procedures OW with mi east 15 mi NTION. Ski	If swall had been seen to be seen	allowed, admind mild cathes. For inhaliash with soa	inister an emetiartic. Eye contaation, remove from and water.	c until vomitus ct, flush with wom area. OBTAIN	is clear. vater for MEDICAL
ergency and Follat LATTE	First Aid Procedures ow with many east 15 mm NTION. Ski	If swall karling was the control of	allowed, admind mild cathes. For inhalish with soar or Spilled or	inister an emetiartic. Eye contaation, remove from and water.	c until vomitus ct, flush with w om area. OBTAIN	is clear. vater for MEDICAL
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ergency and Follat LATTE:  Sto Be Take Clear  Step:	First Aid Procedures ow with minest 15 min NTION. Skill of the control of the con	If swallk and Lnutes in, was a seleased aust we have a seleased aust we had a seleased aust a	allowed, admind mild cathes. For inhaliash with soapor Spilled vear appropriate trect contact	piratory disorder inister an emetiartic. Eye contation, remove from and water.	c until vomitus ct, flush with w om area. OBTAIN	is clear. vater for MEDICAL
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ergency and Follat LATTE:  Sto Be Take Clear  Step:  mate Swee  the Disposal Mate Disp	First Aid Procedures ow with many east 15 mm NTION. Skin e in Case Material is nup crew in s to prevent p up. Method ose in con	If swallk at Inute: Inute: In, was a second at Italian	allowed, admind mild cathons. For inhalmand with soar or Spilled year appropriate to the contact of with diluter	inister an emetiartic. Eye contaation, remove from and water.  interest ties:	c until vomitus ct, flush with w om area. OBTAIN  protection in a	is clear. Vater for MEDICAL  addition t oil-absor
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ergency and Foll at 1 ATTE.  ATTE  Sto Be Take Step mate Swee Step Disposal Months of the Store	First Aid Procedures ow with mi east 15 mi NTION. Ski in Case Material is nup crew sto prever pup. Method ose in con lations.  Taken in Handling e Indoors	If swallk and Inute: In	allowed, admind mild cathes. For inhaliash with soar or Spilled vear appropriate to contact with diluterate with local contact contact with local contact cont	inister an emetiartic. Eye contaation, remove from and water.  interest in the second of the second	c until vomitus ct, flush with v om area. OBTAIN  protection in a and cover with is/ethylene glyc ederal environme	is clear. Vater for MEDICAL  Addition to il-absorution solution
ergency and Foll at 1 ATTE ATTE Steps to Be Take Steps Be	First Aid Procedures ow with management of the second seco	If swallk and Inutes in, was a seed as the	allowed, admind mild cathes. For inhaliash with soar or Spilled year appropriate to contact with dilustrate with local contact contact with local contact cont	inister an emetiartic. Eye contaation, remove from and water.  interest respiratory to Contain spill te aqueous ammonal, state, and formers at 10-35 ontent of contains	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with iz/ethylene glyc ederal environme	is clear. Vater for MEDICAL  Iddition toil-absored solution to sol
ergency and Foll at 1 ATTE ATTE Steps to Be Take Steps Be	First Aid Procedures ow with mi east 15 mi NTION. Ski in Case Material is s to preve rial Neut p up. Method ose in con lations.  Taken in Handling e Indoors and moist	If swallk and Inutes in, was a seed as the	allowed, admind mild cathes. For inhaliash with soar or Spilled vear appropriate to contact with dilustrate with local contact	inister an emetiartic. Eye contaation, remove from and water.  interespiratory t. Contain spill te aqueous ammon al, state, and f	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with ia/ethylene glyc  ederal environme  OC. Protect from ner is not used nitrogen recomm; Poison B; UN 2	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  excessiv at one tilended).
ergency and Foll at 1 ATTE:  ATTE:  ps to be Take Clear step:  step:  mate Swee step: ste Disposal Mate Clear step: cautions to Be Store heat repl:	First Aid Procedures ow with management of the second seco	If swallk and Inutes in, was a seed as the	allowed, admind mild cathes. For inhaliash with soar or Spilled vear appropriate to contact with dilustrate with local contact	piratory disorder inister an emeticantic. Eye contaction, remove from and water.  inister an emeticantic experiment of contaction in the advenue and formal atmosphere (dry ene disocyanate in Poison; Flas	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with ia/ethylene glyc  ederal environme  OC. Protect from ner is not used nitrogen recomm ; Poison B; UN 2 h Point: 158°C.	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  excessiv at one tilended).
ergency and Follat LATTE:  ATTE:  ATTE:  Disposal Materials  Sweether Disposal Materials  Step:  Sweether Disposal Materials  Cautions to Be Store  heat replants  Precautions  Trans	First Aid Procedures ow with management of the second seco	If swillk and Inutes in, with the control of the co	allowed, admind mild cathes. For inhaliash with soar or Spilled appropriate to contact with dilustrate with local dependence contact and the c	inister an emetiartic. Eye contaation, remove from and water.  interespiratory t. Contain spill te aqueous ammon al, state, and f	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with ia/ethylene glyc  ederal environme  OC. Protect from ner is not used nitrogen recomm ; Poison B; UN 2 h Point: 158°C.	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  excessiv at one tilended).
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ps to Be Take  Clear  step  mate  Swee  ste Disposal M Dispo  regu  cautions to Be Store heat repl; er Pracautions Trans	First Aid Procedures ow with mi east 15 mi NTION. Ski  (I) - III Company e in Case Material is nup crew in s to prever rial Neut p up.  Method ose in com lations.  Taken in Handling e indoors and moist ace outage sportation sportation se by the	And Storing in ure.  with (D.)  Per 2 respi	allowed, admind mild cathed in the soar inhaliant with soar in the	piratory disorder inister an emetiartic. Eye contaction, remove from and water.  inister an emetiartic. Eye contaction, remove from and water.  initiate respiratory to Contain spill the aqueous ammonal, state, and for ainers at 10-35 ontent of contaction atmosphere (dry ene disocyanate for Poison; Flas acturer based on	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with ia/ethylene glyc  ederal environme  OC. Protect from ner is not used nitrogen recomm ; Poison B; UN 2 h Point: 158°C.	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  excessiv at one ti ended). 078;
ergency and Follat 1 ATTE  ps to Be Take Clear  step  mate Swee  ste Disposal M Dispo  regul  cautions to Be Store heat repl; er Precautions	First Aid Procedures ow with mi east 15 mi NTION. Ski e in Case Material is nup crew in s to prever rial Neut p up. Wethod ose in con lations.  e Taken in Handling e indoors and moist ace outage sportation  ction (Specify Type) se by the Local Exhaust Require	If swallk and Inutes in, was the state of th	allowed, admind mild cathed in the soar inhaliant with soar in the	inister an emetiartic. Eye contaation, remove free and water.  interest experimental spill to aqueous ammonal, state, and for atmosphere (dry ene disocyanate for experimental spill sp	c until vomitus ct, flush with w om area. OBTAIN  protection in a and cover with iz/ethylene glyc  ederal environme  OC. Protect from ner is not used nitrogen recomm ; Poison B; UN 2 h Point: 158°C.	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  excessiv at one ti ended).  078;
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erally Aggraverally Aggraverall	First Aid Procedures OW with many east 15 mm NTION. Skale in Case Material is nup crew in s to prever rial Neut p up. Wethod Ose in con lations.  Taken in Handling indoors and moist ace outage sportation  Cotton (Specify Type) Se by the Local Exhaust Require Mechanical (Gene Recomme as to ingr Cothing of Equipmen Vecessary	If swallk and Inutes in with the state of th	allowed, admind mild cathes. For inhaliash with soar or Spilled appropriate to contact with dilustrate with local dry inhert of the contact o	inister an emetiartic. Eye contaation, remove from and water.  interest is interest in the aqueous ammonal, state, and for atmosphere (dry ene diisocyanate is Poison; Flas  134 (c), ANSI Z8 acturer based on Spacial on Sp	c until vomitus ct, flush with vom area. OBTAIN  protection in a and cover with ia/ethylene glyc ederal environme  OC. Protect from ner is not used nitrogen recomm; Poison B; UN 2 h Point: 158°C.  8.2-1980 and recingredients and /min. recommende	is clear. vater for MEDICAL  addition t oil-absor col soluti ental  a excessiv at one tilended). 078;  ommended vapor coccentration

Bendix Kansas City Division P.O. Box 419159 Kansas City, MO 64141-6159

# **Material Safety Data Sheet**

	****	Emergency Telepho	ne Number		
****		(816)997-24	74		
Date Prepared 5-22-88		Telephone Number			
Chemical Family		(816)997-31 Synonyms	UU		
Toluene Diisocyanate Dimer	<b>:</b>				
Formula (C <sub>18</sub> H <sub>12</sub> N <sub>4</sub> O <sub>4</sub> )		Cas # 9019-84-5			
Section II - Heretogie Inc	revens/cently	प्रिंगिकार्वाक			
Hazardous Components (Specific Chemical Ident	tity; Common Name(s))	CAS #	ACGIH TLV	Other Limits Recommended	% (optiona
Toluene diisocyanate dimer		9019-84-5	N.E.*		100
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Soling Point	્રેની ( <b>ભેલી</b> દાહિનો ફો	ild hill filler men men server en			
المراجع التي المراجع التي المراجع المر ومرجع المراجع		Specific Gravity (H <sub>2</sub> O	) = 1)		1 2
Boiling Point	N.E.	ild hill filler men men server en	= 1)		1.2
Boiling Point  /apor Pressure (mm Hg.)		Specific Gravity (H <sub>2</sub> O	= 1)		1.2 156°C
Boiling Point  /apor Pressure (mm Hg.)  /apor Density (AIR = 1)	N.E.	Specific Gravity (H₂O	= 1)		156°C
Boiling Point  Vapor Pressure (mm Hg.)  Vapor Density (AIR = 1)  Solubility in Water	N.E.	Specific Gravity (H₂O  Melting Point  Evaporation Rate			156°C
Boiling Point  /apor Pressure (mm Hg.)  /apor Density (AIR = 1)	N.E. Nil Nil	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)			156°C
Point Pressure (mm Hg.)  /apor Pressure (mm Hg.)  /apor Density (AIR = 1)  Solubility in Water  Appearance and Odor  Inite powder with no odor.	N.E. Nil Nil Nil	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By \			156°C
Point Pressure (mm Hg.)  Apor Pressure (mm Hg.)  Apor Density (AIR = 1)  Solubility in Water  Appearance and Odor  White powder with no odor.	N.E. Nil Nil Nil	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By \		LEL	156°C N.E. Nil
Point Pressure (mm Hg.)  Apor Pressure (mm Hg.)  Apor Density (AIR = 1)  Solubility in Water  Appearance and Odor  White powder with no odor.  Alash Point (Method Used)  Greater that  Extinguishing Media	N.E.  Nil  Nil  Nil  Nil  132°C (COC)	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By \		<del></del>	156°C N.E. Nil
Point Pressure (mm Hg.)  Vapor Pressure (mm Hg.)  Vapor Density (AIR = 1)  Solubility in Water  Appearance and Odor  White powder with no odor.  Clash Point (Method Used)  Greater that  Extinguishing Media  Vater spray, CO2, foam, dry	N.E.  Nil  Nil  Nil  Nil  132°C (COC)  y chemical	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By \ Flammable Limits	/olume	LEL	156°C N.E. Nil
Point Point (AIR = 1)  Solubility in Water  Operance and Odor With no odor.  Alash Point (Method Used)  Greater that Axinguishing Media	N.E.  Nil  Nil  Nil  Nil  132°C (COC)  y chemical	Specific Gravity (H <sub>2</sub> O  Melting Point  Evaporation Rate (Butyl Acetate = 1)  Percent Volitiles By \ Flammable Limits	/olume	LEL	156°C N.E. Nil

The information contained herein is supplied by Allied-Signal Inc., Bendix Kansas City Division, in the performance of its Prime Contract No. DE-ACO4-76-DP00613 with the United States Department of Energy and is based on tests and information which we believe to be reliable. However, neither Bendix nor the Government makes any guarantee and no warrantly is expressed or implied with respect to the accuracy and completeness of these data or the results to be obtained from the use thereof. The data herein relate to the specific material designated herein and do not relate to use in combination with any other material or in any process. Neither Bendix nor the Government assumes any responsibility for loss or injury to the user or third parties proximately arising out of the material or data herein or the use thereof. It is responsibility of the user to determine the toxicity, suitability and best precautions necessary for the safe handling and use of this product for its application.

information provided herein is furnished solely for the purpose of compliance with the Occupational Safety and Health Act of 1970 and shall not be used for any other purposes.

# BEST COPY AND ADLE

Stability	Unstable	ĺ	Conditions to Avoid	ويهوه والدراء والمساهد والأدام الأوالية والمستوافقة والمساف والأمار والمساف	<u>ئىزا بىرىمىدۇڭ دېرىيىدۇنىڭ ئىلگە</u>	and the same and t	أنست في مستويد السادي والديد والمستدو
	Stable		Excessive hear	t, decomposes to	toluene d	diisocyanate	•
annochibilit. (Ada		X				,	
Strong ba	aterials to Avoid) ases and wa	iter, a	lcohols, amines,	, organometallics	and act	tive hydrogen	compounds.
azardous Decom	nposition or Byprod	ucts	es of HCN and NC		-	.,	- compositeo.
azardous	May Occur	, trac	Conditions to Avoid	) <b>X</b>			
olymerization	Will Not Occur						
a care or some same and some		<u> </u>		د است داد. د د کما دست را ماهی به دو بخشو شد میشد و در سوی با در میشود. در است داد. د د گرده د د د ماهی به دو دو بخشو شد میشد و در میشود با در میشود و است میشد و است میشود.	وجود معسسريدين شريد رهجان محصاد	in a familia or en monte como de miser de la mario	ومناووه وماني والمناوة معادرون الأدامان
	- स्वा		· Dele			Anna de Santo de La Carte d	
oute(s) of Entry:		nhalation? Yes		Skin? No		Incestion?	
	Acute and Chronic)	OH HE	ating, material	can decompose to	toluene	diisocyanate	(TDI).
Exposure bronchial	<del>to high co</del>	neentr	ations of TDI va	por can cause he	<del>adache, c</del>	oughing, bro	mchitis,
reaction	in sensiti	zed in	dividuals. Kep	peated exposure m	ay cause	allergice re	spiratory
arcinogenicity:							
arcinogenicity:		ITP? O		IARC Monographs?		OSHA Regulated?	
					<del></del>		
gns and Sympton	oms of Exposure	h=====	hdeda				
		brone	nitis, bronchial	spasm, pulmonar	y edema,	allergic res	piratory
reaction.							
edical Conditions							
	3	Indiv	iduals with sens	itized respirator	rv tracts	· · · · · · · · · · · · · · · · · · ·	
	3	Indiv	iduals with sens	itized respirator	ry tracts		
enerally Aggravat	ted by Exposure		,		-		who lot i on
enerally Aggravate nergency and Fin Wash skin	ted by Exposure  rst Aid Procedures the with soap	and wa	ater. Wash eyes	itized respirator	-		nhalation,
enerally Aggravat nergency and Fin Wash skin remove fr	ted by Exposure  rst Aid Procedures Noth Soap  com Contami	and wand	ater. Wash eyes	in a stream of	-		nhalation,
nergency and Fir Wash skin remove fr	rst Aid Procedures with soap Om contami	and wanted	ater. Wash eyes area.	in a stream of	-		nhalation,
nergency and Finwash skin remove fr	rst Aid Procedures with soap	and wanted a	ater. Wash eyes area.	in a stream of	running w	ater. For i	
nergency and Finergency and Finergen	rst Aid Procedures with soap  com contami  in Case Material is rew must w	and wanted and record to the second s	ater. Wash eyes area. Sele Hendling or Spilled propriate respir	in a stream of the Use	running w	ater. For i	
nergency and Finergency and Finergen	rst Aid Procedures with soap  com contami  in Case Material is rew must w	and wanted and record to the second s	ater. Wash eyes area. Sele Hendling or Spilled propriate respir	in a stream of i	running w	ater. For i	
nergency and Fir Wash skin remove fr cemove fr Cleanup c Wear prot	rst Aid Procedures with soap  Com contami  in Case Material is rew must we ective clo	and wanted and wanted and and and and and and and and and an	ater. Wash eyes area.  Self Hending or Spilled propriate respir to prevent direct	in a stream of the USE atory protection t contact. Sweet	running w  to keep p up.	dust from lu	ngs.
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mergency and Fir Wash skin remove fr eps to Be Take Cleanup c Wear prot aste Disposal Me Dispose i ecautions to Be An eyewas	rst Aid Procedures a With Soap com contami in Case Material is rew must we ective clo ethod In complian. Taken in Handling	and wanted and sear appropriate thing the ce with and Storing hower search	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct t	atory protection t contact. Sweet and federal envir	to keep p up.  ronmental	dust from lu	ngs.  ct contact.
nergency and Fine Wash skin remove freps to Be Take Cleanup control wear proteste Disposal Medispose in the Cleanup control of the Cleanu	rst Aid Procedures with soap com contami in Case Material is rew must we ective cloen complian.  Taken in Handling th/safety such 10-35°C.	and wanted and see ar appointment of the control of	ater. Wash eyes area.  Sele lighting or Spilled propriate respir to prevent direct a local, state, Use appropriate should be available from excessive	atory protection t contact. Sween and federal environment of the area. The heat and moisture in the area.	to keep p up.  ronmental pment to Store in ure. If h	dust from lu  regulations  prevent dire doors in uno eated to dec	ngs.
remove fr cleanup c Wear prot aste Disposal Me Dispose i ecautions to Be An eyewas tianers a cransport	rst Aid Procedures a With Soap com contami in Case Material is rew must we ective clo ethod an complian Taken in Handling th/safety sit 10-35°C. should weak ation (D.0	and wanted and storing thing the ce with and Storing hower so Protect T.):	ater. Wash eyes area.  Safe Handling or Spilled propriate respirate prevent direct a local, state,  Use appropriate should be available from excessive pressure ai Not Applicable	atory protection t contact. Sweet and federal envir	to keep p up.  ronmental pment to Store in ure. If h	dust from lu  regulations  prevent dire doors in uno eated to dec	ngs.  ct contact.
nergency and Fin Wash skin remove from the Cleanup control of the Cl	rst Aid Procedures with soap com contami in Case Material is rew must we ective cloenthod in complian.  Taken in Handling th/safety station (D.0 ont: Above	and wanted and sear appoint and Storing hower search and Storing ho	ater. Wash eyes area.  Self Heffilling or Spilled propriate respir to prevent direct a local, state, Use appropriate should be available from excessive pressure ai Not Applicable (COC)	atory protection t contact. Sween and federal environment of the area. The heat and moisture in the area.	to keep p up.  ronmental pment to Store in ure. If h	dust from lu  regulations  prevent dire doors in uno eated to dec	ngs.  ct contact.
mergency and Fin Wash skin remove from the English skin remove from the En	rst Aid Procedures a With Soap com contami in Case Material is rew must we ective cloethod an complian.  Taken in Handling th/safety station (D.0 ont: Above	and wanted and sear appropriate and Storing hower appropriate appropriate and Storing hower appr	ater. Wash eyes area.  Safe Handling or Spilled propriate respirate prevent direct a local, state,  Use appropriate should be available from excessive pressure at Not Applicable (COC)	atory protection t contact. Sweet and federal envir protective equip ble in the area. e heat and moistur supplied respir	to keep p up.  ronmental pment to Store in ure. If h	dust from lu  regulations  prevent directions  ated to decotection.	ngs.  ct contact. pened con- omposition,
nergency and Fir Wash skin remove fr eps to Be Take Cleanup c Wear proteste Disposal Me Dispose i ecautions to Be An eyewas tianers a error aste Precaptor Transport.	rst Aid Procedures with soap com contami in Case Material is rew must we ective cloethod in complian. Taken in Handling h/safety sit 10-35°C. should wear ation (D.0 nt: Above	and wanted and storing hower sprotes T.):  132°C Per 29	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct from excessive pressure aid Not Applicable (COC)	atory protection t contact. Sweet and federal envir protective equipable in the area. e heat and moistur r supplied respir	to keep p up.  ronmental pment to Store in ure. If heratory pr	dust from lu  regulations  prevent dire doors in uno eated to dec otection.	ngs.  ct contact. pened con- omposition,
mergency and Fir Wash skin remove fr eps to Be Take Cleanup c Wear protaste Disposal Me Dispose i ecautions to Be An eyewas tianers a errecapions Transport Flash Poispiratory Protection prescribes	rst Aid Procedures with Soap om contami in Case Material is rew must we ective cloentod in complian. Taken in Handling th/safety sit 10-35°C. should we ation (D.0 on: Above on (Specify Type) of the contamination of the	and wanated and storing thing the storing hower storing hower storing the storing	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct from excessive pressure aid Not Applicable (COC)	atory protection t contact. Sweet  and federal envir protective equipable in the area. e heat and moistur supplied respir	to keep p up.  ronmental pment to Store in ure. If heratory pr	dust from lu  regulations  prevent dire doors in uno eated to dec otection.	ngs.  ct contact. pened con- omposition,
mergency and Fir Wash skin remove fr emove fr eps to Be Take Cleanup c Wear protaste Disposal Me Dispose i ecautions to Be An eyewas tianers a expension of the protaste Precapitors Transport.	rst Aid Procedures with soap om contami in Case Material is rew must we ective cloen at 10-35°C. should we ation (D.0 ont: Above on (Specify Type) of by the relation to the commence of the c	and wanated and sear appoint and Storing hower sear appoint. T.):  132°C Per 29 espirateded	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct from excessive pressure aid Not Applicable (COC)	atory protection t contact. Sweet  and federal envir  protective equipable in the area. e heat and moistur r supplied respir  ANSI Z99.2-1986 based on ingredi	to keep p up.  ronmental pment to Store in ure. If heratory pr	dust from lu  regulations  prevent dire doors in uno eated to dec otection.	ngs.  ct contact. pened con- omposition,
nergency and Fin Wash skin remove from the Cleanup control of the Cl	rst Aid Procedures with Soap om contami in Case Material is rew must we ective cloentod in complian. Taken in Handling th/safety sit 10-35°C. should we ation (D.0 on the compliant of the compli	and wanated and sear appoint and Storing hower sear appoint. T.):  132°C Per 29 espirateded	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct from excessive pressure aid Not Applicable (COC)	atory protection t contact. Sweet and federal envir protective equipable in the area. e heat and moistur supplied respiration. ANSI 299.2-1986 based on ingredi	to keep p up.  ronmental pment to Store in ure. If h ratory pr	dust from lu regulations prevent direction.  ommended type	ngs.  ct contact. pened con- omposition,
mergency and Fire Wash skin remove from the Cleanup control of the C	rst Aid Procedures with soap om contami in Case Material is rew must we ective cloemon complian.  Taken in Handling h/safety sit 10-35°C. should wear ation (D.0 nt: Above on (Specify Type) of by the relation of the commence of the commenc	and wanted and sear appropriate and Storing hower sear appropriate and sear appropriate and sear appropriate and search appropriate and	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct a local, state,  Use appropriate should be available from excessive pressure ai Not Applicable (COC)  CFR 1910.134(c) for manufacturer	atory protection t contact. Sweet  and federal envir  protective equipable in the area. e heat and moistur r supplied respir  ANSI Z99.2-1986 based on ingredi	to keep p up.  ronmental pment to Store in ure. If h ratory pr	dust from lu regulations prevent direction.  ommended type	ngs.  ct contact. pened con- omposition,
nergency and Fir Wash skin remove fr remove from the Cleanup control of the Cleanup control	rst Aid Procedures with soap om contami in Case Material is rew must we ective cloemon complian.  Taken in Handling h/safety sit 10-35°C. should wear ation (D.0 nt: Above on (Specify Type) of by the relation of the commence of the commenc	and wanted and sear appropriate and Storing hower sear appropriate and sear appropriate and sear appropriate and search appropriate and	ater. Wash eyes area.  Safe Handling or Spilled propriate respir to prevent direct from excessive pressure aid Not Applicable (COC)	atory protection t contact. Sweet and federal envir protective equipable in the area. e heat and moistur supplied respiration. ANSI 299.2-1986 based on ingredi	to keep p up.  ronmental pment to Store in ure. If h ratory pr	dust from lu regulations prevent direction.  ommended type	e to use as

		SECTION 5 ENVIRONMENTAL FATE	
PART	A F	RATE CONSTANTS AND TRANSFORMATION PRODUCTS	
5.01	Inc	licate the rate constants for the following transformation processes.	
	a.	Photolysis:	
		Absorption spectrum coefficient (peak) Unknown* (1/M cm) at	_ nm
		Reaction quantum yield, 6	_ nm
		Direct photolysis rate constant, k <sub>p</sub> , at Unknown* 1/hr 1	atitude
	b.	Oxidation constants at 25°C:	
		For 10 <sub>2</sub> (singlet oxygen), k <sub>ox</sub> Unknown*	_ 1/M hr
		For RO <sub>2</sub> (peroxy radical), k <sub>ox</sub> Unknown*	_ 1/M hr
	c.	Five-day biochemical oxygen demand, BOD <sub>5</sub> Unknown*	_ mg/l
	d.	Biotransformation rate constant:	
		For bacterial transformation in water, k <sub>b</sub> Unknown*	_ 1/hr
		Specify culture	_
	e.	Hydrolysis rate constants:	
		For base-promoted process, k <sub>B</sub>	_ 1/M hr
		For acid-promoted process, k Unknown*	_ 1/M hr
		For neutral process, k <sub>N</sub> Unknown*	_ 1/hr
	f.	Chemical reduction rate (specify conditions)Unknown*	_
	g.	Other (such as spontaneous degradation) Unknown*	-

[_]	Mark (X)	this bo	ox if you	attach	a continuation	sheet.	
							_

5.02	a.	Specify the half-life of the listed substance in the following media.						
		Media			<u>Half-li</u>	fe (specif	y units)	
		Groundwater		Unkno	wn*			
		Atmosphere		<u> Unkno</u>	wn*			
		Surface water		Unkno	wn*			-
		Soil		Unkno	wn*			
	b.	Identify the liste life greater than	ed substance 24 hours.	's known tr	ansformation	products	that hav	e a half-
		CAS No.		Name	Half-l (specify	ife units)	!	Media
		Unknown*					in	
							in	
		**			2		in	
					<u> </u>		in	
5.03		cify the octanol-wa			•	Unknown	*	at 25°0
5.04		cify the soil-water						
5.05	Spec	rify the organic car ficient, K <sub>oc</sub>	rbon-water p	artition	••••••	Unknown	*	at 25°C
	· · · · ·				••••••			

Bioconcentration Factor Unknown*	Species	<u>Test<sup>1</sup></u>
OIKHOWH.		
 <sup>1</sup> Use the following codes to de	signate the type of test:	
F = Flowthrough S = Static		

	Markan	Quantity Sold or Transferred (kg/yr)	Total Sales Value (\$/yr)
	Market		
	Retail sales		
	Distribution Wholesalers		
	Distribution Retailers		
	Intra-company transfer		-
	Repackagers		
	Mixture producers		
	Article producers		
	Other chemical manufacturers or processors		
	Exporters		
	Other (specify)		
05	N/A Substitutes List all known commerc	N/A ially feasible substitu	N/A ites that you know exi
.05 BI	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is earn your current operation, and which performance in its end uses.	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is earn your current operation, and which performance in its end uses.	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable
	Substitutes List all known commerce for the listed substance and state the feasible substitute is one which is even in your current operation, and which performance in its end uses.  Substitute	ially feasible substitue cost of each substitue conomically and technol	ites that you know existe. A commercially logically feasible to luct with comparable

# SECTION 7 HANUFACTURING AND PROCESSING INFORMATION

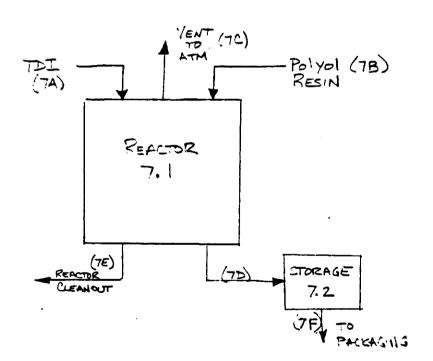
General Instructions:.

For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the

# PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the CBI

[ ] Process type ..... TDI Polyurethane Prepolymer Process



<sup>[ ]</sup> Hark (X) this box if you attach a continuation sheet.

7.03 CBI	In accordance with the instructions, provide a process block flow diagram showing process emission streams and emission points that contain the listed substance as which, if combined, would total at least 90 percent of all facility emissions if treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instruction for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.					tance and tions if not released tructions process		
	Process ty	pe		N/A				
_							·	
			•					
						,		
						•		

] Proce	Process type TDI Polyurethane Prepolymer Process							
Uni Opera ID Numbe	tion	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	<b>Vessel</b> <u>Composition</u>			
7.	<u>1</u> F	Reactor	RT to 150°	ATm to 1000	Stainless Ste			
7.	2 I	Barrels	RT to 60	ATm	Steel			
			<del></del>					
		•						

7.05	Describe each process block question and	process stream identified in p flow diagram is provided for a complete it separately for each	your process block flow of fore than one process type process type.	liagram(s). If a				
CBI		•						
1_1	Process type TDI Polyurethane Prepolymer Process							
	Process Stream ID Code	Process Stream Description	Physical State <sup>1</sup>	Stream Flow (kg/yr)				
	7A	TDI	OL	11400				
	7B	Polyol	OL	1140				
	7C	Vent	GU	?				
	7C 7D	Vent TDI Prepolymer	GU OL	? 12540				

Use the following codes to designate the physical state for each process stream:

GC = Gas (condensible at ambient temperature and pressure)

GU - Gas (uncondensible at ambient temperature and pressure)

SO = Solid

SY = Sludge or slurry

AL = Aqueous liquid

OL - Organic liquid

IL = Immiscible liquid (specify phases, e.g., 90% vater, 10% toluene)

<sup>[ ]</sup> Hark (X) this box if you attach a continuation sheet.

Ì	Process ty	pe			
	4.	<b>5.</b>	c.	d.	<b>e.</b>
	Process Stream ID Code	Known Compounds	Concentrations <sup>2,3</sup> (X or ppm)	Other Expected Compounds	Estimated Concentration (Z or ppm)
	7A	TDI	100	N/A	N/A
	7B	Polyol	100	N/A	
	7C	Vent			
	<b>7</b> D	TDI Prepolymer	100	N/A	
•	7E	Acetone	99.5 (E)	TDI	0.5 (E)

7.06 continued below

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

7.06 (contir	ıued	I)
--------------	------	----

<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	N/A	N/A
2		
3		
4		
•		
•		
5		
	o designate how the concentration	n was determined:
A = Analytical result E = Engineering judgement	/calculation	
Use the following codes to	o designate how the concentration	n vas measured:
V = Volume W = Weight		
ark (X) this box if you at	tach a continuation sheet.	

8.01 CBI	In accordance with which describes t	th the instructions the treatment proce	s, provide a res ess used for res	sidual treatment b siduals identified	lock flow diagram in question 7.01.
[_]	Process type	None		·	***
	. •				
					·
					,
				,	
					·

BI —]	process type.	type, photo	copy this que e instruction	estion and comes for further	low diagram is mplete it separation a	rately for ea	cn process
—,	a.	b.	c.	d.	e.	f.	g.
	Stream ID Code	Type of Hazardous Vaste	Physical State of Residual <sup>2</sup>	Known Compounds <sup>3</sup>	Concentra- tions (% or ppm) <sup>4</sup> ,5,6	Other Expected Compounds	Estimated Concentrations (% or ppm)
							<u> </u>
.05	continu	ed below					

## 8.05 (continued)

<sup>1</sup>Use the following codes to designate the type of hazardous waste:

I = Ignitable

C = Corrosive

R = Reactive

E = EP toxic

T = Toxic

H = Acutely hazardous

<sup>2</sup>Use the following codes to designate the physical state of the residual:

GC = Gas (condensible at ambient temperature and pressure)

GU = Gas (uncondensible at ambient temperature and pressure)

SO = Solid

SY = Sludge or slurry

AL = Aqueous liquid

OL = Organic liquid

IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

## 8.05 continued below

[\_\_] Mark (X) this box if you attach a continuation sheet.

8.05	(continued)
ו כט.ם	CONCINCO

8.05

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	N/A	
2		
3		
4		•
<b>5</b>		
<sup>4</sup> Use the following codes to	designate how the concentra	ation was determined:
A = Analytical result E = Engineering judgement/c	alculation	
continued below	····	,
Mark (X) this box if you at	tach a continuation sheet.	

0 0	E /				nu	~4	١
8.0	<b>5</b> (	C	תכ	τι	nu	ea	,

<sup>5</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

<sup>6</sup>Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

Code		Method	Detection Limit (± ug/l)
1_	N/A		
_2			
3			·
4			
_5			
6			

[ ] Mark (X) this box if you attach a continuation sheet.

CBI	•	<b>A</b>	N/A					
[_]	Process a.	type b.	N/A	d.	e		f.	g.
	Stream ID Code	Waste Description Code	Management Method Code <sup>2</sup>	Residual Quantities (kg/yr)	of Resi	gement dual (%) Off-Site	Costs for Off-Site Management (per kg)	Changes in Management Methods
				<u>·</u>				
,					<del>47272</del>			***************************************
				<u> </u>				
				bit 8-1 to d bit 8-2 to d				

[_]	-	Ch	ustion amber ture (°C)	Temp	tion of erature nitor	In Con	ence Time abustion (seconds)
	Incinerator	Primary	Secondary	Primary	Secondary	Primary	Secondary
	1	N/A	N/A	N/A	N/A	N/A	N/A
	2						
	3		•				<u> </u>
	by circ	ling the app		oonse.			
	1.0						
CBI	Complete the are used on-s treatment blo	ite to burn	the residuals	three larges s identified	t (by capacit in your proc	ess block of Type:	r residual
B.23 CBI	are used on-s	ite to burn	the residuals ram(s). Air Po	s identified  ollution  l Device <sup>1</sup>	t (by capacit in your proc	ess block of Type: Emission	r residual
CBI	are used on-s treatment blo	ite to burn	the residuals ram(s). Air Po Control	ollution	t (by capaciting the process of the	Type: Emission Avai	r residual s of ns Data
CBI	are used on-s treatment blo  Incinerator	ite to burn	the residuals ram(s).  Air Po Control	ollution	t (by capaciting to the capaci	Type: Emission Avai	r residual s of ns Data
CBI	Incinerator  2  Indicate by circ	ite to burn ck flow diag e if Office ling the app	the residuals ram(s).  Air Po Control  N/A  N/A  N/A  of Solid Wass propriate resp	ollution l Device	s been submit	Type: Emission Avai  N/A  N/A  N/A	s of ns Data lable  of response
CBI	Incinerator  2  Indicate by circular are used on-streament blo	ite to burn ck flow diag e if Office ling the app	Air Po Control  N/A  N/A  N/A  of Solid Wast propriate resp	ollution l Device  te survey haponse.	s been submit	Type: Emission Avai  N/A  N/A  N/A  tted in lieu	s of ns Data lable
CBI	Incinerator  2  Indicate by circumstance of the second sec	e if Office	Air Po Control N/A N/A N/A of Solid Wast propriate resp	ollution l Device  te survey haponse.	s been submit	Type: Emission Avai  N/A  N/A  N/A  tted in lieu	s of ns Data lable
CBI	Incinerator  2  Indicate by circumstance of the second sec	e if Office	Air Po Control N/A N/A N/A of Solid Wast	te survey haponse.	s been submit	Type: Emission Avai  N/A  N/A  N/A  ted in lieu	s of ns Data lable

## PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

	Data are Ma:	intained for	: Year in Which	Number of
Data Element	Hourly Workers	Salaried Workers	Data Collection Began	Years Records Are Maintained *
Date of hire	X	X	1949	Indefinite
Age at hire	X	X	1949	Indefinite
Work history of individual				
before employment at your facility	X	X	1949	Indefinite
Sex	X	X	1949	Indefinite
Race	X	<u> </u>	1949	<u>Indefinite</u>
Job titles	X	<u> </u>	1949	Indefinite
Start date for each job title	X	X	1949	Indefinite
End date for each job title	X	<u> </u>	1949	Indefinite
Work area industrial hygiene monitoring data	X	X	1965	Indefinite
Personal employee monitoring data	<u> </u>	X	1965	Indefinite
Employee medical history	X	X	1949	Indefinite
Employee smoking history	X	X	1969	Indefinite
Accident history	·X	X	1949	10
Retirement date	X	X	1949	Indefinite
Termination date	<u> </u>	<u> </u>	1949	Indefinite
Vital status of retirees				_ 1.1
Cause of death data	X	<u> </u>	1979	Indefinite

<sup>\*</sup> No records retained on terminees prior to 1964

<sup>[</sup>\_] Mark (X) this box if you attach a continuation sheet.

9.02 CRT	In accordance with the in which you engage.	instructions, complete	the following t	able for e	each activity
[_]	•. a.	b.	c.	d.	€.
	Activity	Process Category	Yearly Quantity (kg)	Total Vorkers	Total
	Manufacture of the listed substance	Enclosed			Vorker-Bours
	and and the	Controlled Release			
		Open			
	On-site use as reactant	Enclosed			
	1	Controlled Release	11400	4	224
		Open ,			
	On-site use as nonreactant	Enclosed			
	<del>-</del>	Controlled Release			
		0pen			
	On-site preparation of products	Enclosed			
		Controlled Release			
		Open ·			

 $<sup>\{\</sup>overline{\underline{X}}\}$  Mark (X) this box if you attach a continuation sheet.

encompasses workers listed substance.  CBI  []	ive job title for each labor category at your facility that who may potentially come in contact with or be exposed to the
Labor Category	Descriptive Job Title
A	Engineer
В	Engineering Technologist
С	
D	
Ε	
F	
G	
н	
I	
- J	
J	

[X] Mark (X) this box if you attach a continuation sheet.

In accordance with to in which you engage.	he instructions, complet	e the following t	able for e	ach activ
4.	<b>b</b> .	c.	d.	
Activity	Process Category	Yearly Quantity (kg)	Total	Tota
Manufacture of the listed substance	Enclosed			Vorker-
and a death of the second	Controlled Release			
	Open			
On-site use as reactant	Enclosed			
	Controlled Release			
	Open			
On-site use as nonreactant	Enclosed			
	Controlled Release			•
	0pen			
On-site preparation of products	Enclosed			
F = 3-4-10	Controlled Release	6800	33	48,100
	0pen			40,100

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

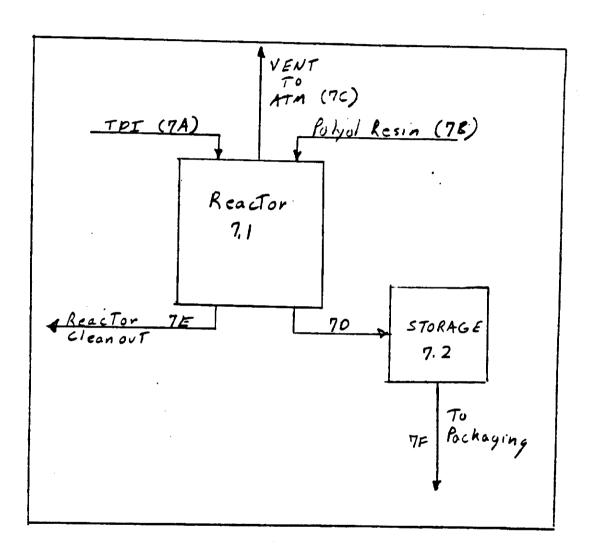
9.03 <u>CBI</u> [_]	Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.							
	Labor Category	Descriptive Job Title						
	A	Plastic Fabricator						
	В	Electronics Assembler						
	С	Production Foreman						
	D	Engineer						
	E	Laborer						
	F	Pipefitter						
	G	Machine Repairman						
	H							
	I							
	J .							

[ ] Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CRI

[ ] Process type ..... TDI Polyurethane Prepolymer Process



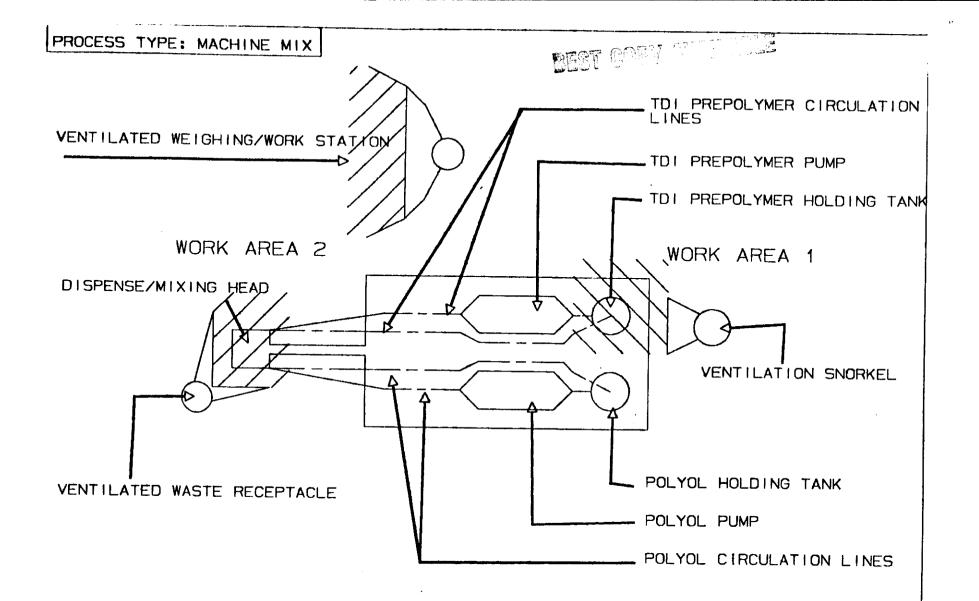
<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

9.05 CBI	EUUILIOHEL ALBES AA.	vork area(s) shown in question 9.04 that encompass workers who in contact with or be exposed to the listed substance. Add an snown in the process block flow diagram in question 7.01 or question and complete it separately for each process type.
1_1	Process type	TDI Polyurethane Prepolymer Process
	Work Area ID	Description of Work Areas and Worker Activities
	1	Reactor Area (workers charge and dump reactor
	2	and package material)
	3	
	4	
	5	
	6	
	7	
	8	
	9	
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	•	
	••	
		attach a continuation sheet.

	Process type TDI Polyurethane Prepolymer Process  Vork area										
	TOLK AFER .	• • • • • • • • • • • • • • • •	• • • • • • • • • • • • • •	•••••	•••••	1					
	Labor Category	Number of Vorkers Exposed	Hode of Expos (e.g., di skin cont	rect	Physical State of Listed Substance <sup>1</sup>	Average Length of Exposure Per Day	Number Days pe Tear Expose				
	<u>A,B</u>	4	Skin conta	ct	OL	С	14				
	A,B	4	Inhalation		GU	С	14				
	•										
S	GC = Gas (contemperature) GU = Gas (unitemperature) include GO = Solid	oving codes to exposure:  ondensible at a sture and pressible at a sture and pressible at a sture and pressible sture and pressible stures, vapor	ambient sure) ( ambient sure; (s, etc.)	SY = 3 AL = 4 OL = 6 IL = 3	Sludge or slum Aqueous liquid Organic liquid Immiscible liq (specify phase OX water, 102	rry i l uid s, e.g.,	stance at				
• บ	se the follo	ving codes to	designate ave	rage len	igth of exposu	re per day:					
3	Greater t exceeding	s or less han 15 minutes 'I hour	, but not	D = Gr	eater than 2	hours, but no					
C	= Greater t exceeding	han one hour,	but not	47	eater than 4 ceeding 8 houseater than 8	7 <b>2</b>	<b>t</b>				

CBI	Photocopy this questarea.	TWA) exposure levels and the 15-mi stion and complete it separately f	or each process type and work
<u></u> (	Process type	TDI Polyurethane Propolymer	Process
`—'		· · · · · · · · · · · · · · · · · · ·	eactor Area
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m³, other-specify)
	A	Less than 0.005 ppm	Less than 0.02 ppm
	В	Less than 0.005 ppm	Less than 0.02 ppm
		·	

9.04	In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.
CEI	•
[_]	Process type Machine Mix
	SEE ATTACHED ILLUSTRATION
	·
	•.
	ark (X) this box if you attach a continuation sheet.



OPERATOR TD1 PREPOLYMER EXPOSURE AREAS ( cross hatched )

WORK AREA 1 - VENTED OUTSIDE TO ATMOSPHERE

WORK AREA 2 - VENTED THROUGH ACTIVATED CHARCOAL AND RECIRCULATED TO THE WORK AREA

9.05 CBI	CUULLIOURI ALMES AA.	work area(s) shown in question 9.04 that encompass workers who in contact with or be exposed to the listed substance. Add an shown in the process block flow diagram in question 7.01 or question and complete it separately for each process type.
	Process type	
	Work Area ID	Description of Work Areas and Worker Activities
	1	Tank Filling Area - Loading material in tanks
	2	Foam Pouring Area - Mixing and pouring of foam component
	3	
	4	
	5	
	6	
	7	
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[ ] Mark (X) this box if you attach a continuation sheet.

]	Process typ	• ····			ted Substance. Ype and work a						
	Work area 1 - Tank Filling Area										
	Labor Category	Number of Vorkers Exposed	Mode of Expo (e.g., d skin con	Bure irect	Physical State of Listed Substance	Average Length of Exposure Per Day	Number Days pe Tear Expose				
	A	1	Skin conta	ct	OL	В	26				
	A	1	Inhalation		GU	В	26				
				<del></del>							
					· .						
				-							
2 1	GC = Gas (contemper GU = Gas (under the contemper include SO = Solid Use the followed solid contemper followed solid contemper for the followed solid contemper for t	owing codes to exposure:  ondensible at ature and pressible a ature and presses fumes, vapo	ambient Sure) t ambient Sure; rs, etc.)	SY = AL = OL = IL =	Sludge or slu Aqueous liqui Organic liqui Immiscible lid (specify phase 90% vater, 100 angth of expose	rry d d quid es, e.g., K toluene)					
į	A = 15 minute B = Greater	than 15 minute:	s, but not	D = G	reater than 2	hours, but no	t				
	exceeding Greater	g 1 hour than one hour, g 2 hours		exceeding 4 hours			t				

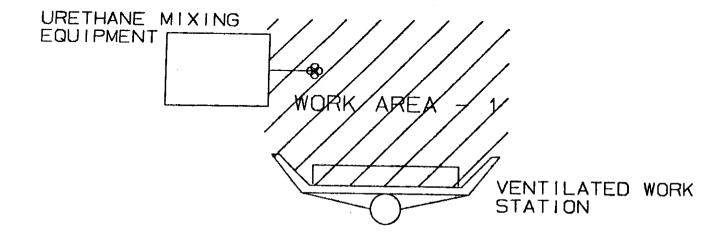
	Weighted Average (	egory represented in question 9.06 (TVA) exposure levels and the 15-min estion and complete it separately for	nute peak exposure levels.
CBI			
[_]	Process type	·· Machine Mix	
	Work area	<u></u>	- Tank Filling Area
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)
	Α	approx. 0.005 ppm	approx. 0.02 ppm
	·		
		**************************************	•
	<u></u>	· · · · · · · · · · · · · · · · · · ·	
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9.06	- TORE 15 COS	Kass when he i	able for each work our facility that he exposed to the ly for each proces	The same of the same	TO AND CEA DO	.05, and fo tentially his question			
	Process type Machine Mix								
	Vork area .	• • • • • • • • • • • • •		····· 2 - I	Form Pouring	Area			
	Labor Category	Number of Vorkers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed	Average Length of Exposure Per Day	Number o Days per Year			
	<u>A</u>	2	Skin contact	OL	E	Exposed 230			
	<u>A</u>	2	Inhalation	GU	E	230			
	C	1	Inhalation	GÜ	В	230			
	D	3	Skin contact	OL	A	230			
	D	3	Inhalation	GÜ	В	230			
	E,F,G	1	Skin contact	OL .	В	15			
	E,F,G	1	Inhalation	GÜ	В	15			
(	GC = Gas (c temper: GU = Gas (u temper: include 50 = Solid	ondensible at ature and pres ncondensible a sture and pres st fumes, vapo	sure) Al R ambient Ol Sure; II rs, etc.)	f = Sludge or slud - Aqueous liquid - Organic liquid - Immiscible liq (specify phase 90% water, 102	rry i i quid us, e.g.,	stance at			
8	= ID minute   = Greater t   exceeding	s or less han 15 minute: 1 hour han one hour.	but not	= Greater than 2 exceeding 4 hou of Greater than 4 exceeding 8 hou of Greater than 8	re per day: hours, but no rs hours, but no				

9.07	Weighted Average (	egory represented in question 9.06 TVA) exposure levels and the 15-mi stion and complete it separately f	nute peak exposure levels.
CBI			
	Process type	Machine Mix	
	Work area		- Foam Pouring Area
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Leve. (ppm, mg/m³, other-specify)
	A	approx. 0.0005 ppm	approx. 0.02 ppm
	С	approx. 0.0005 ppm	approx. 0.02 ppm
	D	approx. 0.0005 ppm	approx. 0.02 ppm
	E	approx. 0.0005 ppm	approx. 0.02 ppm
	F	approx. 0.0005 ppm	approx. 0.02 ppm
	G .	approx. 0.0005 ppm	approx. 0.02 ppm
			· .
		•	
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9.0	4 In ac	corda	ince	vith th	e instr	ructions,	provide ye	our process	block	flov	liagram(s)	and
CBI			•									
1_	] Proce	ss ty	pe .	• • • • • •	Enca	apsulatio	o <b>n</b>					
												<b>—</b>
	,				SEE	E ATTACHE	ED ILLUSTR	ATION				
	-								•			
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<u> </u>		-										
] 1	fark (X)	this	box	if you	attach	a contin	nuation she	et.				
						9:	1					

## PROCESS TYPE: ENCAPSULATION



WORK AREA - 1 - VENTED OUTSIDE TO ATMOSPHERE

( TDI prepolymer exposure area cross hatched

7.02. Photocopy chi	vork area(s) shown in question 9.04 that encompass workers who in contact with or be exposed to the listed substance. Add an snown in the process block flow diagram in question 7.01 or a question and complete it separately for each process type.
Process type	Encapsulation
Work Area ID	Description of Work Areas and Worker Activities
1	Potting of Electronic Assemblies
2	
3	
4	
5	
6	
7	
8	
9	
10	
<b>_</b>	
• •	

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area. CBI

[\_] Process type ..... Encapsulation

Labor Category	Number of Vorkers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance	Average Length of Exposure Per Day	Number of Days per Year
В	30	Direct skin contact	OL	A	Exposed 250
B	30	Inhalation	GU	С	250
С	5	Inhalation	GU		250
F	2	Direct skin contact	OL	A	10
<u> </u>	2	Inhalation	GU	A	10
E,G	2	Inhalation	GU	A	10
D	4	Direct skin contact	OL .	A A	250
D	4	Inhalation	GÜ	В	250

Use the following codes to designate the physical state of the listed substance at

GC - Gas (condensible at ambient

temperature and pressure) GU = Gas (uncondensible at ambient temperature and pressure;

includes fumes, vapors, etc.)

SO - Solid

SY = Sludge or slurry

AL - Aqueous liquid

OL = Organic liquid

IL - Immiscible liquid (specify phases, e.g., 90% vater, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less

B - Greater than 15 minutes, but not

exceeding 1 hour

C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours

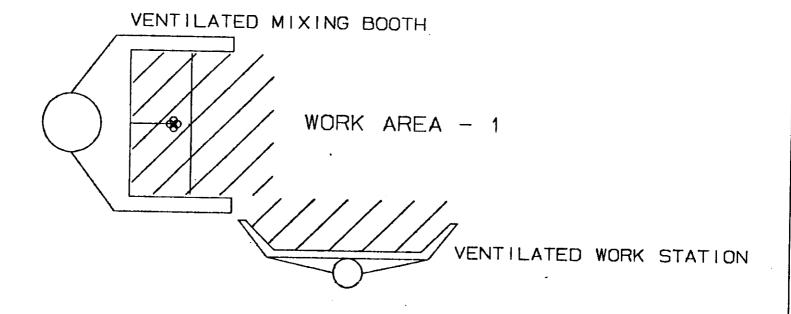
E - Greater than 4 hours, but not exceeding 8 hours

F = Greater than 8 hours

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

9.07	Weighted Average (	egory represented in question 9.06 TVA) exposure levels and the 15-mi stion and complete it separately f	nute peak exposure levels.
CBI			
	Process type	Encapsulation	
	Work area	·····	
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m <sup>3</sup> , other-specify)	15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)
	В	approx. 0.005 ppm	approx. 0.02 ppm.
	C	approx. 0.005 ppm	approx. 0.02 ppm
	D	approx. 0.005 ppm	approx. 0.02 ppm
	E	approx. 0.005 ppm	approx. 0.02 ppm
	F	approx. 0.005 ppm	approx. 0.02 ppm
	G	approx. 0.005 ppm	approx. 0.02 ppm
	<del></del>		
			•
•			
			•
	•		

9.04	In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.
<u>CPI</u>	•
[_]	Process type Batch Mix
_	Daten Mix
	SEE ATTACHED ILLUSTRATION



WORK AREA - 1 - VENTED THROUGH ACTIVATED CHARCOAL AND RECIRCULATED TO THE WORK AREA

( TDI prepolymer exposure area cross hatched )

9.05 CBI	auditional atms oc-	vork area(s) shown in question 9.04 that encompass workers who in contact with or be exposed to the listed substance. Add as snown in the process block flow diagram in question 7.01 or question and complete it separately for each process type.
[_]	Process type	Batch Mixing
	Vork Area ID	Description of Work Areas and Worker Activities
	1	Batch Mixing Area = Mixing and pouring of foam component
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9 .	
*	10	
		·
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	come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.  Process type Batch Mix								
	Work area .	• • • • • • • • • • • • • • • • • • • •	<u>l - Batch Mixing Area</u>						
	Labor Category	Number of Vorkers Exposed	Mode of Exposu (e.g., dir skin conta	re ect	Physical State of Listed Substance	Average Length of Exposure Per Day	Number of Days per Year Exposed		
	A	1	Skin contact	t	OL	В	150		
	A	1	Inhalation		GU	В	150		
	D	1	Skin contact		OL	A	30		
	D	1	Inhalation		GU	A	30		
	Use the foll the point of	owing codes to	designate the	physica	al state of t	he listed sub	stance at		
:	GU = Gas (u temper includ SO = Solid	ondensible at ature and pres ncondensible a ature and pres es fumes, vapo	sure) {	AL = A OL = C IL = I	cludge or sludgeous liquid rganic liquid maiscible liquid specify phase OX water, 103	d d quid es, e.g., C toluene)			
	Use the following codes to designate ave  A = 15 minutes or less  B = Greater than 15 minutes, but not exceeding 1 hour  C = Greater than one hour, but not exceeding 2 hours			rerage length of exposure per day:  D = Greater than 2 hours, but not exceeding 4 hours  E = Greater than 4 hours, but not exceeding 8 hours  F = Greater than 8 hours					

[-]	Process type	Batch Mix	
·—·			l - Batch Mixing Area
	Labor Category	8-hour TWA Exposure Level (ppm, mg/m³, other-specify)	15-Minute Peak Exposure Leve (ppm, mg/m <sup>3</sup> , other-specify)
	A	approx. 0.005 ppm	approx. 0.02 ppm
	D	approx. 0.005 ppm	approx. 0.02 ppm
		\	
			<u> </u>
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		i.	
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9.08 CBI	If you monitor worker exposure to the listed substance, complete the following							
[_]	Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Records Maintained	
	Personal breathing zone	TDI PROC	ESS None	None	N/A	N/A	N/A	
	General work area (air)			11	ţţ	tt .	***	
	Wipe samples	п	11	11	11	11	11	
	Adhesive patches	11	11	11	11	11	11	
	Blood samples	11	11	11	11	11	11	
	Urine samples			t1	11	11	11	
	Respiratory samples	11		11		***	11	
	Allergy tests		<u>. 11</u>	11				
	Other (specify)							
	Other (specify)			•				
	Other (specify)							
	<sup>1</sup> Use the following of	andes to	designate wh	o takes the	monitori	ng samples		
	A = Plant industria B = Insurance carri C = OSHA consultant D = Other (specify)	al hygien: ier t	ist					

[_]	Sample Type	Sa	Sampling and Analytical Methodology						
	N/A	N/A							
					•				
9.10	If you conduct person	nal and/or ambient	air monitoring for	the listed s	ubstance,				
CBI	specify the following	g information for (	each equipment type	e used.					
 [_]	Equipment Type	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number				
_	N/A	N/A	N/A	N/A	N/A				
	·			_					
	<sup>1</sup> Use the following c	odes to designate	personal air monito	oring equipmen	it types:				
	A = Passive dosimet B = Detector tube C = Charcoal filtra D = Other (specify)	tion tube with pum	p						
	Use the following c	odes to designate		ring equipment	types:				
	<pre>E = Stationary monitors located within work area F = Stationary monitors located within facility G = Stationary monitors located at plant boundary H = Mobile monitoring equipment (specify) I = Other (specify)</pre>								
	<sup>2</sup> Use the following o	<sup>2</sup> Use the following codes to designate detection limit units:							
	A = ppm B = Fibers/cubic centimeter (f/cc) C = Micrograms/cubic meter (μ/m²)								
	C = Micrograms/cubi	c meter (p/= /							

]		Vork	Testing Frequency	Number of Samples	Who	Analyzed In-House	Number of Years Record
	Sample/Test	Area ID		(per test)	Samples <sup>1</sup>	(Y/N)	Maintained
	Personal breathing Mozone	lachine Mi	x 1 yr. avg	. 1	A	Y	Indefinite
	General work area (air)		2 yr. avg	a	A	Y	Indefinite
	Wipe samples	***	11	11	***	. 11	11
	Adhesive patches	11	11	11	***	11	11
	Blood samples	· it	11	11	11	11	
	Urine samples	***	11	11	11	11	11
	Respiratory samples		tt	†1	11	11	11
	Allergy tests	11	11	***		11	11
	Other (specify)					•	
	Other (specify)						
	Other (specify)		***				
	<sup>1</sup> Use the following c						
	A = Plant industria B = Insurance carri C = OSHA consultant D = Other (specify)	l hygieni er	_	takes the		g samhies:	

]	Sample Type	9	Sampling and Analyti	ical Methodolog	<u>ሃ</u>
	Real Time Monitor	Colorimetric			
					-
.10	If you conduct persona specify the following				bstance,
BI —]	<b>Equipment Type</b> <sup>1</sup>	Detection Limit <sup>2</sup>	<sup>2</sup> Manufacturer	Averaging Time (hr)	Model Number
<b>—</b> '	D - Real Time Monitor TDI Tape		MDA	7005 -24 hrs. 4000 -1 hr.	-
	<pre>1 Use the following cod A = Passive dosimeter B = Detector tube C = Charcoal filtrati D = Other (specify)</pre>			oring equipment	types:
	Use the following cod	es to designate	ambient air monitor	ing equipment	types:
	E = Stationary monito F = Stationary monito G = Stationary monito H = Mobile monitoring I = Other (specify)	rs located withirs located at pl	n facility ant boundary		
	<sup>2</sup> Use the following cod	es to designate	detection limit uni	.ts:	
	A = ppm B = Fibers/cubic cent	imeter (f/cc) meter (µ/m³)			

to the listed Substance. P process type and work area.	•		It sepera	ceth for	
Process type					
Vork area	• • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	· <u>l</u> - Tank filling		
Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Yea	
Ventilation:					
Local exhaust	<u> </u>	1964	N		
General dilution	N				
Other (specify)					
Vessel emission controls	N				
Mechanical loading or packaging equipment	. N				
Other (specify)	-				
		<del></del>			
				•	
	•				
•.		•	•		

<u>[</u>			Touting	Number of		Analyzed	Number of
	Sample/Test	Work Area ID	Testing Frequency (per year)	Samples (per test)	Who Samples <sup>1</sup>	In-House (Y/N)	Years Records Maintained
	Personal breathing b	Machine Mi	ix <u>l yr. avg</u>	. 1	A	Y	Indefinite
	General work area (air)	2	4 yr. avg	1	A	Y	Indefinite
	Wipe samples	2	N/A	N/A	N/A	·N/A	N/A
	Adhesive patches	2	11		11	91	Ħ
	Blood samples	2	11	***	***	11	11
	Urine samples	2	11	††	11	11	ŧŧ
	Respiratory samples	2	11	11	11	tt .	11
	Allergy tests	2	11	11	***	11	11
	Other (specify)						
	Other (specify)						
	Other (specify)						
	<sup>1</sup> Use the following c	odes to d	esignate who	takes the	monitorin	g samples:	
	A = Plant industria B = Insurance carri C = OSHA consultant D = Other (specify)	er	st				

	Sample Type	<u>s</u>	ampling and Analyt	ical Methodolog	<u>sy</u>					
	Real Time Monitor	Colorimetric	2							
				·						
		<del></del>			•					
9.10	If you conduct persona specify the following	l and/or ambient information for	air monitoring for each equipment type	r the listed su	ibstance,					
<u>CBI</u>	Equipment Type <sup>1</sup>	Detection Limit <sup>2</sup>	<u> Manufacturer</u>	Averaging Time (hr)	Model Number					
	D-Real Time Monitor TDI Tape	A	MDA	7005 - 24 hrs 4000 - 1 hr	7005 or 4000					
	Use the following cod	es to designate	personal air monito	oring equipment	types:					
	A = Passive dosimeter B = Detector tube C = Charcoal filtrati D = Other (specify)	on tube with pum	•		<del> </del>					
	Use the following codes to designate ambient air monitoring equipment types:									
	<pre>E = Stationary monitors located within work area F = Stationary monitors located within facility G = Stationary monitors located at plant boundary H = Mobile monitoring equipment (specify) I = Other (specify)</pre>									
	<sup>2</sup> Use the following cod	es to designate	detection limit un:	its:						
	A = ppm B = Fibers/cubic cent	imeter (f/cc) meter (µ/m³)			•					

Describe the engineering con to the listed Substance. Ph process type and work area.	trols that yo otocopy this	u use to reduce o question and comp	r eliminate von lete it separa	rker exposur tely for eac
Process type	Machine	Mix		
Vork area	• • • • • • • • • • • •		<u>2 - Foam P</u>	ouring Area
Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year
Ventilation:			(1/4)	Upgraded
Local exhaust	N .		,	
General dilution	N			
Other (specify) Ventilation circulated the activated charcoal (10%)	nru Y			
exhaus  Vessel emission controls		1964	<u> </u>	1986
Mechanical loading or packaging equipment	N			
Other (specify)				

(	Hark	<b>(X)</b>	this	box	if	you	attach	a.continuation	sheet.
						•		/ 2 11 9 6 / 7 0 11	31144

]	Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Record Maintained
	Personal breathing I	Encapsulat 1	ion 1 yr. avg.	1	A	Y	Indefinite
	General work area (air)	1	4 yr. avg.	1	A	Y	Indefinite
	Wipe samples	1	N/A	N/A	N/A	· N/A	N/A
	Adhesive patches	11	11			11	11
	Blood samples	11	rt	11	11	11	11
	Urine samples	lt .	11		†1	***	11
	Respiratory samples	***	11	11	11	11	11
	Allergy tests	- 11	T1	11	11	11	tt
	Other (specify)						
	Other (specify)						
	Other (specify)			<del></del>			
••	<sup>1</sup> Use the following of A = Plant industria B = Insurance carri C = OSHA consultant D = Other (specify)	l hygieni er	esignate who	o takes the		g samples:	

	Sample Type		Sampling and Analyt	ical Methodology						
	Real Time Monitor	Colorimetr	ic		-					
		·		-	<del></del>					
.10	If you conduct person specify the following			r the listed substance, e used.						
BI	opecity and rollowing									
_1	Equipment Type <sup>1</sup>	Detection Limit	<sup>2</sup> Manufacturer	Averaging Time (hr) Model Num	nber					
	D-Real Time Monitor TDI Tape	A	MDA	7005 - 24 hrs. 4000 - 1 hr. 7005 or	4000					
	<sup>1</sup> Use the following co	des to designate	personal air monit	oring equipment types:						
	A = Passive dosimete B = Detector tube C = Charcoal filtrat D = Other (specify)		mp .							
		Use the following codes to designate ambient air monitoring equipment types:								
	<pre>E = Stationary monit F = Stationary monit G = Stationary monit H = Mobile monitorin I = Other (specify)</pre>	ors located with ors located at p	in facility lant boundary							
	<sup>2</sup> Use the following co	des to designate	detection limit un	its:						
	A = ppm B = Fibers/cubic cen C = Micrograms/cubic			·						
	C = Micrograms/cubic	: meter (µ/m²)								

	Test Description	(weekly, mo	Frequency nthly, yearly, etc.)
N/A		N/A	
			•

Sample/Test	Work Area ID	Testing Frequency (per year)	Number of Samples (per test)	Who Samples <sup>1</sup>	Analyzed In-House (Y/N)	Number of Years Records Maintained
Personal breathing zone	Batch Mi l	x N/A	N/A	N/A	N/A	- N/A
General work area (air)	"	11	ří .	11	11	11
Wipe samples	11	11		!1	- 11	11
Adhesive patches	11	11	11		11	11
Blood samples	***	11	11	11	11	11
Urine samples		11	11	11	Ħ	11
Respiratory samples		***	11	11	11	11
Allergy tests	11	Pf .	11	11	11	
Other (specify)						
Other (specify)	<u> </u>	•				
Other (specify)			<del></del>			
					•	

[\_] Mark (X) this box if you attach a continuation sheet.

	Sample Type	Sa	mpling and Analyt	ical Methodolo	ogy						
	N/A N/A										
٠											
					•						
.10	If you conduct person specify the following				substance,						
<u>BI</u>	Equipment Type <sup>1</sup>	Detection Limit <sup>2</sup>	Manufacturer	Averaging Time (hr)	Model Number						
	N/A	N/A	N/A	N/A	N/A						
					-						
				•							
				,							
	D = Other (specify)	er tion tube with pump									
	Use the following codes to designate ambient air monitoring equipment types:										
	E = Stationary monitors located within work area F = Stationary monitors located within facility G = Stationary monitors located at plant boundary H = Mobile monitoring equipment (specify) I = Other (specify)										
	<sup>2</sup> Use the following codes to designate detection limit units:										
	'Use the following o	<pre>A = ppm B = Fibers/cubic centimeter (f/cc) C = Micrograms/cubic meter (μ/m³)</pre>									
	A = ppm B = Fibers/cubic ce				·						

<u>[</u> _]	•	Test Des	cription			-	(weekly,	Freque monthly	ency yearly,	etc.)
	N/A	· ·			· · · · · · · · · · · · · · · ·		N/A			
							<del>,</del>			
						_				
					····	_			-	
-						_				
		·		•						
							·	•		
								•		
							•			

. 12	12 Describe the engineering controls that you use to reduce or eliminate worker export to the listed Substance. Photocopy this question and complete it separately for				
CBI .					
_1	Process type	TDI Poly	rethane Prepoly	mer Process	
	Vork area				
	Engineering Controls	Used (Y/N)	Year <u>Install</u> ed	Upgraded (Y/N)	Year
	Ventilation:				Upgraded
	Local exhaust	<u> </u>	1966	N	
	General dilution	N			
	Other (specify)				
		N			
	Vessel emission controls	N			
	Mechanical loading or packaging equipment	N			
(	Other (specify)				
	•	<b>N</b>			

[ ] Mark (X) this box if you attach a continuation sheet.

9.12 CBI	Describe the engineering control to the listed Substance. Phoprocess type and work area.	rols that yo tocopy this	d use to reduce of question and comp	or eliminate vo lete it separa	rker exposure tely for each
	Process type	Machine 1	Mix		
	Vork area	• • • • • • • • • •		1 - Tank f	illing
	Engineering Controls Ventilation:	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
	Local exhaust  General dilution  Other (specify)	Y N	1964	N	
	Vessel emission controls  Mechanical loading or packaging equipment	N N			
-	Other (specify)				

<sup>[ ]</sup> Hark (X) this box if you attach a continuation sheet.

12	Describe the engineering control to the listed Substance. Phoprocess type and work area.	rols that yo tocopy this	u use to reduce o question and comp	r eliminate vo lete it separa:	rker exposure
1	Process type	Machine	Mix		
	Vork area			. 2 - Foam P	ouring Area
	Engineering Controls	Used (Y/N)	Year _Installed	Upgraded	Year
	Ventilation:			<u>(Y/N)</u>	Upgraded
	Local exhaust	N .			
	General dilution	N			
	Other (specify) Ventilation circulated thr activated charcoal (10%	u Y	1964		1006
1	exhaust emission controls	N/A	1904	<u> </u>	1986
!	dechanical loading or packaging equipment	N			
C	ther (specify)				

<sup>[ ]</sup> Hark (X) this box if you attach a continuation sheet.

Year stalled	· 1 Upgraded (Y/N)	Year Upgraded
Year stalled	Upgraded (Y/N)	
stalled	<u>(Y/N)</u>	
*	N	
	14	
<del></del>		

[ ] Mark (X) this box if you attach a continuation sheet.

<sup>\*</sup>Ventilation exists in several locations for this process. In two locations the ventilation was installed prior to 1982. In four other locations ventilation was installed after 1982.

12	Describe the engineering cont to the listed Substance. Pho process type and work area.	rols that yo tocopy this	u use to reduce of question and comp	or eliminate voi elete it separat	rker exposur tely for eac
1	Process type	Batch Mix			
	Vork area	• • • • • • • • • • •		<u>1 -</u> Batch M	ix Area
	Engineering Controls	Used (Y/N)	Year Installed	Upgraded (Y/N)	Year Upgraded
	Ventilation:				<u>operaded</u>
	Local exhaust	N			
	General dilution	N			
	Other (specify) Ventilation circulated thru activated charcoal (10%	Y	1964	Y	1986
	exhaust) Vessel emission controls	N/A			
į	Mechanical loading or packaging equipment	N			

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

Process			,	sulted. Phot and work are repolymer Pr		
		• • • • • • • • • • • • • • • • • • • •			. 1	
		or Process )			Reduction Exposure P	in Vorke
	None					er iest (
			•			
			-			
		•				
		•				
•						
	••					

_1	Process type		
	Equipment of	r Process Modification	Reduction in Vorker Exposure Per Year (1
	None		
	·		
		•	
	•		
	••		

9.13 <u>CBI</u>	Describe all equipment or process modifications you have a prior to the reporting year that have resulted in a reduct the listed substance. For each equipment or process modifithe percentage reduction in exposure that resulted. Photocomplete it separately for each process type and work area	tion or worker exposure thication described, state
[_]	rachine mix	
	Vork area	2 - Foam Pouring Area
	Equipment or Process Modification	Reduction in Vorker Exposure Per Year (%)
	A wall was constructed to separate the tank	148 (4)
	filling and foam pouring areas, new ventilated	
	work stations were built into the wall.	
		·
		·.
	••	
-		

	<u>Encapsulation</u>		pe Encapsulation				
	or Process Me			Redu Expos	ction in Vo		
None		·					
					,		
				-			
•							
		•	,				
•.							

Process type Batch   Batch   Work area	
Equipment or Process A	fodification Reduction in Vork Exposure Per Year
None	
·	
•	
	·
•.	

9.14	in and work area	onal protective and safety equipment or control or control or control or complete copy this question and complete	i their expos	lure to the listed
<u>CBI</u>				
[_]	Process type	TDI Polyurethane Prepol	ymer Proces	<u>s</u>
	Work area		••••••	
		Equipment Types	Vear or Use (Y/N)	
		Respirators	N	
		Safety goggles/glasses	Y	
		Face shields	N	
		Coveralls	N	
		Bib aprons	N	
		Chemical-resistant gloves	Y	
		Other (specify)		
		Lab coats	Y	

9.14 CBI	Describe the perin each work are substance. Photand work area.	rsonal protective and safety equal in order to reduce or eliminal complete copy this question and complete	dipment that you the their exponent exponent exponent experies the separate.	our workers wear or use sure to the listed ly for each process type
1_1	Process type	Machine Mix		
			•••••	<u>l - Tank Filling Are</u>
		Equipment Types	Vear or Use (Y/N)	
		Respirators	N	
		Safety goggles/glasses	Y	
		Face shields	N	
		Coveralls	Y	
		Bib aprons	Y	
	•	Chemical-resistant gloves	Y	
		Other (specify)		
	·			

9.14	Describe the personal protective and safety e in each work area in order to reduce or elimi substance. Photocopy this question and compl	quipment that your ve	rkers wear or use
CBI	substance. Photocopy this question and compland work area.	ete it separately for	o the listed each process type
[_]	Process type Machine Mix		
	Vork area	····· <u>2</u> -	· Foam Pouring Area
	Equipment Types	Vear or Use (Y/N)	
	Respirators	N	
	Safety goggles/glasses	Y	
	Face shields	N	
	Coveralls	Y	
	Bib aprons	Y	
	Chemical-resistant gloves	Y	
	Other (specify)		

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

9.14 CBI	Describe the p in each work a substance. Ph and work area.	ersonal protective and safety equives in order to reduce or elimina otocopy this question and complet	sipment that you to their expose it separatel	ur vorkers vear or use ure to the listed y for each process typ
[_]	Process type .	Encapsulation		
	Work area	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	. 1
	•	Equipment Types  Respirators  Safety goggles/glasses  Face shields  Coveralls	Vear or Use (Y/N) N Y	
	•	Bib aprons Chemical-resistant gloves Other (specify)		

CBI  [ ] Process type Batch Mix  Vork area 1 - Batch  Vear or Use	n Mixing Are
Vork area 1 - Batcl	n Mixing Are
· · · · · · · · · · · · · · · · · · ·	
Equipment Types Use (Y/N)	
Respirators	
Safety goggles/glasses Y	
Face shieldsN	
Coveralls	
Bib aprons Y	
. Chemical-resistant gloves Y	•
Other (specify)	

<sup>[ ]</sup> Mark (X) this box if you attach a continuation sheet.

9.15	respirators rested, and	use respirators when the the the terms when the terms when the terms of the type and frequent separately for each process.	age, whether of	tors are W	sed, the type	of
CBI						
[_]	Process type	Respirat	ors are not u	sed for a	nv of the pr	ocess types.
	·				, , , , , , , , , , , , , , , , , , ,	cocco cypest
	Vork Area	Respirator Type	Average Usage <sup>1</sup>	Fit Tested (Y/N)	Type of Fit Test <sup>2</sup>	Frequency of Fit Tests (per year)
	Use the following A = Daily B = Veekly C = Monthly D = Once a 3 E = Other (s	lowing codes to design  vear  specify)	nate average u	sage:		
	<sup>2</sup> Use the foll QL = Qualita	oving codes to design	nate the type o	of fit test	::	
	QT = Quantit	ative				
		•	•	•		
	•.					
_] H	ark (X) this	box if you attach a	continuetion e	and the same of th		

9.19 Describe all of the work eliminate worker exposur authorized workers, mark monitoring practices, programmers of the progra	areas with varn	ing signs, in	g., restrict Sure vorker d	entrance only to etection and
Process type TDI	Polyurethane Pi	repolymer Pro	cess	
Vork area			1	
Restricted entrance, v				
				,
20 Indicate (X) how often yo leaks or spills of the li separately for each proces	ss type and work	area.	ra destion T	lean up routine nd complete it
20 Indicate (X) how often yo leaks or spills of the li separately for each proce.  Process type TDI I Work area	ss type and work Polyurethane Pre	epolymer Proc	eess	Hore Than 4
Process type TDI I	Polyurethane Pre	epolymer Proc	ess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks	Polyurethane Pre	epolymer Proc	eess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks  Sweeping	Less Than Once Per Day	epolymer Proc	eess	nd complete it
Process type TDI I  Work area  Housekeeping Tasks  Sweeping  Vacuuming	Less Than Once Per Day X	epolymer Proc	eess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors	Less Than Once Per Day X	epolymer Proc	eess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Vacuuming	Less Than Once Per Day X	epolymer Proc	eess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors	Less Than Once Per Day X	epolymer Proc	eess	Hore Than 4
Process type TDI I  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors	Less Than Once Per Day X	epolymer Proc	eess	Hore Than 4

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?				
	Routine exposure				
	Yes 1				
	No ②				
	Emergency exposure				
	Yes 1				
	No 2				
	If yes, where are copies of the plan maintained?				
	Routine exposure:				
	Emergency exposure:				
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.				
	Yes 1				
	No 2				
	If yes, where are copies of the plan maintained?  A written generic spill plan is available throughout the plant site.				
	Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.				
	Yes ①				
	No 2				
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.				
	Plant safety specialist 1				
	Insurance carrier 2				
	OSHA consultant 3				
	Other (specify) Environment, Safety, and Health Organization				
[_]	Mark (X) this box if you attach a continuation sheet.				

<u>CBI</u>	Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.					
	Process type Mac	hine Mix				
	Work area	••••••		<u>1 – T</u> ank	: Filling	
	Periodic exposure	monitoring				
	Caution signs indi	cate use of TDI				
	Access limited					
	Worker training in	regards to haz	ardous mater	ials		
	Indicate (X) how often you leaks or spills of the lis separately for each process Process type Mach	ine Mix	area.	question &	lean up routine nd complete it	
	Process type Mach	ine Mix  Less Than	1-2 Times	Cank filling	lean up routine nd complete it  Hore Than 4	
	Process type Mach	Less Than Once Per Cay	area. 1 - 1	Cank filling	nd complete it	
	Process type Mach  Fork area	ine Mix  Less Than	1-2 Times	Cank filling	Hore Than 4	
,	Process type Mach  Fork area  Housekeeping Tasks  Sweeping  Vacuuming	Less Than Once Per Cay X	1-2 Times	Cank filling	Hore Than 4	
Ţ	Process type Mach  Fork area  Housekeeping Tasks  Sweeping	Less Than Once Per Lay	1-2 Times	Cank filling	Hore Than 4	
Ţ	Process type Mach  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors	Less Than Once Per Cay X	1-2 Times	Cank filling	Hore Than 4	
Ţ	Process type Mach  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Water flushing of floors	Less Than Once Per Cay X	1-2 Times	Cank filling	Hore Than 4	

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?
	Routine exposure
	Yes 1
	No
	Emergency exposure
	Yes 1
	No 2
	If yes, where are copies of the plan maintained?
	Routine exposure:
	Emergency exposure:
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.
	Yes 1
	No ②
	If yes, where are copies of the plan maintained? A written generic spill plan is available throughout the plant site.
•	Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.
	Yes ①
	No 2
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.
	Plant safety specialist 1
	Insurance carrier
	OSHA consultant 3
	Other (specify) Plant Environmental, Safety, and Health organization
[_]	Mark (X) this box if you attach a continuation sheet.

authorized vorkers, mark monitoring practices, pr question and complete it	eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with varning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.					
Vork area						
			2 - Foan	Pouring Area		
Caution signs, wor				•		
Periodic monitori	ng					
20 Indicate (X) how often yo leaks or spills of the li separately for each proce  Process type Mad Work area	ss type and work	area.	es desertou F	nd complete it		
separately for each proce	ss type and work	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Mad	Less Than Once Per Day	area. 2 -	Foam Pouring	Area  Hore Than 4		
Process type Man  Work area  Housekeeping Tasks	ss type and work	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Made Work area  Housekeeping Tasks Sweeping Vacuuming	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Man Work area  Housekeeping Tasks Sweeping Vacuuming Vacuuming Vater flushing of floors	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Made Work area  Housekeeping Tasks Sweeping Vacuuming	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Man Work area  Housekeeping Tasks Sweeping Vacuuming Vater flushing of floors	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Man Work area  Housekeeping Tasks Sweeping Vacuuming Vacuuming Vater flushing of floors	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	nd complete it		
Process type Man Work area  Housekeeping Tasks Sweeping Vacuuming Vater flushing of floors	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		
Process type Man Work area  Housekeeping Tasks Sweeping Vacuuming Vacuuming Vater flushing of floors	Less Than Once Per Day	2 - 1-2 Times	Foam Pouring	Area  Hore Than 4		

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?
	Routine exposure
	Yes 1
	No 2
	Emergency exposure
	Yes 1
	No ②
	If yes, where are copies of the plan maintained?
	Routine exposure:
	Emergency exposure:
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.
	Yes 1
	No ②
	If yes, where are copies of the plan maintained? A written generic spill plan is
	available throughout the plant site. Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.
	Yes ①
	No 2
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.
	Plant safety specialist 1
	Insurance carrier 2
	OSHA consultant 3
	Other (specify) Plant Environmental, Safety, and Health organization
[_]	Mark (X) this box if you attach a continuation sheet.

9.19 <u>CBI</u>	Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.					
	Process type End					
	Work area	••••••		1		
	Caution signs inc	dicate use of TDI				
	Worker training					
	Work instructions	s instruct labore	rs to use ve	ntilation		
		·				
20	Indicate (X) how often y leaks or spills of the 1 separately for each process type Enc	ess type and work	area.	ask used to c is question e	lean up routine nd complete it	
. 20	Process type End	capsulation  Less Than	1-2 Times	1 3-4 Times	nd complete it	
. 20	Process type End Work area Housekeeping Tasks	Less Than Once Per Day	area.	1	Hore Than 4	
	Process type End  Work area  Housekeeping Tasks  Sveeping	Less Than Once Per Day	1-2 Times	1 3-4 Times	Hore Than 4	
	Process type End Work area  Housekeeping Tasks Sveeping Vacuuming	Less Than Once Per Day	1-2 Times	1 3-4 Times	nd complete it	
	Process type End Work area  Housekeeping Tasks Sweeping Vacuuming Vater flushing of floors	Less Than Once Per Day	1-2 Times	1 3-4 Times	Hore Than 4	
	Process type End  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Vacuuming  Vater flushing of floors  Other (specify)	Less Than Once Per Day X	1-2 Times	1 3-4 Times	Hore Than 4	
	Process type End Work area  Housekeeping Tasks Sweeping Vacuuming Vater flushing of floors	Less Than Once Per Day	1-2 Times	1 3-4 Times	Hore Than 4	
	Process type End  Work area  Housekeeping Tasks  Sweeping  Vacuuming  Vacuuming  Vater flushing of floors  Other (specify)	Less Than Once Per Day X	1-2 Times	1 3-4 Times	Hore Than 4	
	Process type End Work area  Housekeeping Tasks Sweeping Vacuuming Vater flushing of floors Other (specify) Wet mop floor	Less Than Once Per Day X	1-2 Times	1 3-4 Times	Hore Than 4	

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?
	Routine exposure
	Yes 1
	No 2
	Emergency exposure
	Yes 1
	No 2
	If yes, where are copies of the plan maintained?
	Routine exposure:
	Emergency exposure:
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.
	Yes 1
	No 2
	If yes, where are copies of the plan maintained? A written generic spill plan is available throughout the facility.
	Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.
	Yes 1
	No 2
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.
	Plant safety specialist 1
	Insurance carrier
	OSHA consultant 3
	Other (specify) Plant Environmental, Safety, and Health organization4
[_]	Mark (X) this box if you attach a continuation sheet.

9.19	Describe all of the unri	k praestene		_	
	Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.				
	Process type	latch Mix			
	Work area	• • • • • • • • • • • • • • •	•••••••	<u>1 - Bat</u>	ch Mixing Area
	Periodic exposure moni				
	Worker training				
1	Indicate (X) how often yo leaks or spills of the li separately for each proce  Process type Bat	ss type and work	area.	ra daesciou T	nd complete it
1	Process type Bat	ss type and work	area. 1 -	Batch Mixing	nd complete it
<u>H</u>	Process type Bat  Fork area	ss type and work	area.	ra daesciou T	Area  Hore Than 4
<u>H</u>	Process type Bat	ch Mix  Less Than	1-2 Times	Batch Mixing	Area
H.	Process type Bat  Fork area	ch Mix  Less Than Once Per Day	1-2 Times	Batch Mixing	Area  Hore Than 4
H S	Process type Bat  Work area	ch Mix  Less Than Once Per Day	1-2 Times	Batch Mixing	Area  Hore Than 4
E S	Process type Bat  Work area  Sousekeeping Tasks  Weeping  acuuming	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4
E S V	Process type Bat  Fork area  Fousekeeping Tasks  Freeping  acuuming  acuuming  ater flushing of floors	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4
E S V	Process type Bat  Fork area  Fousekeeping Tasks  Freeping  acuuming  acuuming  ater flushing of floors	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4
E S	Process type Bat  Fork area  Fousekeeping Tasks  Freeping  acuuming  acuuming  ater flushing of floors	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4
E S	Process type Bat  Fork area  Fousekeeping Tasks  Freeping  acuuming  acuuming  ater flushing of floors	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4
E S	Process type Bat  Fork area  Fousekeeping Tasks  Freeping  acuuming  acuuming  ater flushing of floors	Less Than Once Per Day  X	1-2 Times	Batch Mixing	Area  Hore Than 4

9.21	Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?
	Routine exposure
	Yes 1
	No ②
	Emergency exposure
	Yes 1
	No 2
	If yes, where are copies of the plan maintained?
	Routine exposure:
	Emergency exposure:
9.22	Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.
	Yes 1
	No ②
	If yes, where are copies of the plan maintained? A written generic spill plan is available throughout the plant site.
	Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.
	Yes ①
	No 2
9.23	Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.
	Plant safety specialist 1
	Insurance carrier
	OSHA consultant 3
	Other (specify) Plant Environmental, Safety, and Health organization
(_)	Mark (X) this box if you attach a continuation sheet.

## SECTION 10 ENVIRONMENTAL RELEASE

## General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RO.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

10.01	Where is your facility located? Circle all appropriate responses.
CBI	
[_]	Industrial area
	Urban area
	Residential area
	Agricultural area 4
	Rural area 5
	Adjacent to a park or a recreational area
	Within 1 mile of a navigable waterway
	Within 1 mile of a school, university, hospital, or nursing home facility 8
	Within 1 mile of a non-navigable waterway 9
	Other (specify)10

10.02	Specify the exact location of your is located) in terms of latitude an (UTM) coordinates.	d longitude or Univ	ersal Tra	ınsverse	Mercader
	Latitude		38	• 57	, 30 N
	Longitude		094	• 34	12 W
	UTM coordinates Zone _	, Northi	ng	, <b>Ea</b> st	ing
10.03	If you monitor meteorological condithe following information.	tions in the vicini	ty of you	ır facili	ty, provide
	Average annual precipitation		Unknown		_ inches/year
	Predominant wind direction		Unknown		_
	Depth to groundwater		Unknown		meters
10.05 CBI	For each on-site activity listed, is listed substance to the environment Y, N, and NA.)	indicate (Y/N/NA) al (Refer to the in	l routing	ns for a	es of the definition of
	For each on-site activity listed, i listed substance to the environment	indicate (Y/N/NA) al (Refer to the in	1 routing	ns for a	es of the definition of
CBI	For each on-site activity listed, i listed substance to the environment Y, N, and NA.)	indicate (Y/N/NA) al :. (Refer to the in Envi	l routing struction ronmenta Vate	ns for a l Release er	es of the definition of
CBI	For each on-site activity listed, is listed substance to the environment Y, N, and NA.)  On-Site Activity	indicate (Y/N/NA) al :. (Refer to the in Envi	l routing struction ronmenta Wate	ns for a l Release er	es of the definition of Land
CBI	For each on-site activity listed, is listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing	endicate (Y/N/NA) al c. (Refer to the in Envi	l routing struction ronmenta Wate	ns for a l Release er	es of the definition of Land
CBI	For each on-site activity listed, is listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing	indicate (Y/N/NA) al :. (Refer to the in Envi Air N/A N/A	l routing struction ronmenta Vate N/A N/A	Release	Land  N/A
CBI	For each on-site activity listed, in listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing	Envi	l routing struction ronmenta  N/A  N/A	Release	Land  N/A  N/A
CBI	For each on-site activity listed, in listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing  Otherwise used	Envi	l routing struction ronmenta Wate N/A N/A N/A	Release	Land  N/A  N/A  N/A
CBI	For each on-site activity listed, is listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing  Otherwise used  Product or residual storage	Envi	nonmenta Vate N/A N/A N/A	Release	Land  N/A  N/A  N/A  N/A
CBI	For each on-site activity listed, in listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing  Otherwise used  Product or residual storage  Disposal	Envi	nl routing struction  ronmenta  Vate  N/A  N/A  N/A  N/A	Release	Land  N/A  N/A  N/A  N/A
CBI	For each on-site activity listed, in listed substance to the environment Y, N, and NA.)  On-Site Activity  Manufacturing  Importing  Processing  Otherwise used  Product or residual storage  Disposal	Envi	nl routing struction  ronmenta  Vate  N/A  N/A  N/A  N/A	Release	Land  N/A  N/A  N/A  N/A

<u> </u>	of precision for each item. (Refer to the instrant an example.)		-
_]	Quantity discharged to the air	Unknown	kg/yr ±
	Quantity discharged in wastewaters	N/A	kg/yr ±
	Quantity managed as other waste in on-site treatment, storage, or disposal units	n/A	kg/yr ±
	Quantity managed as other waste in off-site treatment, storage, or disposal units	N/A	kg/yr <u>+</u>

10.08 CBI		technologies used to minimize release eam containing the listed substance as idual treatment block flow diagram(s). rately for each process type.	of the listed substance identified in your Photocopy this question
[_]		TDI Polyurethane Prepolymer Process	
	Stream ID Code 7A,B,D,E,F	Control Technology Diking	Percent Efficienc
-			
		•	
	•• 	•	

PARI E	RELEASE TO AIR	
10.09 <u>CBI</u> [_]	residual treatment b	ns Identify each emission point source containing the listed f a Stream ID Code as identified in your process block or lock flow diagram(s), and provide a description of each point ude raw material and product storage vents, or fugitive emissionment leaks). Photocopy this question and complete it separately e.
	Process type	TDI Polyurethane Prepolymer Process
	Point Source ID Code	Description of Emission Point Source
	7C	Vent
•		
•		
•		
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production of listed substance)

<sup>7</sup> 

_1	Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m)	Building Vidth(m) <sup>2</sup>	Vent Type
	7C	1.8(est.	) 0.09	23.4	370.8	58.8	18.9	<u>V</u>
							-	
			<del></del>					
					- /	- · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
			·		,	***************************************	<del></del>	
	<sup>1</sup> Height o	of attached	or adjacent	building				
	<sup>2</sup> Width of	attached o	or adjacent l	ouilding				
	<sup>3</sup> Use the	following o	odes to desi	ignate vent	type:			
	H = Hori V = Vert							

[\_\_] Mark (X) this box if you attach a continuation sheet.

0.12 CBI	diaminution for each Point Source ID (	particulate form, indicate the particle size code identified in question 10.09. It separately for each emission point source
<u></u> 1	Point source ID code	N/A
	Size Range (microns)	Mass Fraction (% ± % precision)
	<b>&lt; 1</b>	
	≥ 1 to < 10	
	≥ 10 to < 30	
	≥ 30 to < 50	
	≥ 50 to < 100	
	≥ 100 to < 500	
	≥ 500	
		Total = 100%
		•
	•	
		•

10.13 CBI	Equipment Leaks Completypes listed which are exaccording to the specifie the component. Do this fresidual treatment block not exposed to the listed process, give an overall exposed to the listed subfor each process type.	d veight perd or each proce flow diagram( substance.	ent of the state o	he listed identified not included in the lister of the lis	substance in your le equipment or inter	ere in so passing process ( ent types	through block or that are
[_]	Process type TDI	Polyurethan	ne Prepoi	lymer Pro	cess		
	Percentage of time per year type	ir that the l	isted sub	Stance is	arnosed	to this o	FOCOSS
		•		•••••	• • • • • • • •	••••• _	4
		MUMBER	of Liste	nents in d d Substant	Service b	y Veight	Percent
	Equipment Type	Less					. Greater
	Pump seals	than 5%	3-107	11-252	26-75X	76-992	than 99
	Packed				•		
	Mechanical						
	Double mechanical <sup>2</sup>						
(	Compressor seals						
	langes						
	/alves			<del></del>			
	Gas'						
	Liquid						
P	ressure relief devices (Gas or vapor only)						$\frac{1}{1}$
S	ample connections						
	Gas						
	Liquid						
01	pen-ended lines <sup>5</sup> (e.g., purge, vent)						
	Gas			1			
	Liquid						
, I	ist the number of pump and ompressors	compressor	seals, ra	ther than	the numb	er of pum	ps or
	ontinued on next page						

10.13	(continued)			
	If double mechanical se greater than the pump s vill detect failure of vith a "B" and/or an "S	als are operated wint tuffing box pressure the seal system, the	h the barrier (B) and/or equipped w barrier fluid sys	fluid at a pressure ith a sensor (5) tha
	<sup>3</sup> Conditions existing in	the value dust-		out, indica
	Report all pressure relicontrol devices	ief devices in servit	e, including those	h mendan d
	Lines closed during norm	aal operation that wo	uld be used during	Baintenance
10.14 <u>CBI</u>	Pressure Relief Devices we pressure relief devices i devices in service are column enter "None" under column	of the Controls Comp dentified in 10.13 to ntrolled. If a press c.	lete the following o indicate which p sure relief device	table for those ressure relief is not controlled,
_	A. Number of Pressure Relief Devices	b. Percent Chemical in Vessel	Control Device	d. Estimated
	1	90	None	Control Efficiency
•				
•				
•				
-				
-				
-				
²Ti	efer to the table in quest eading entitled "Number of ubstance" (e.g., <52, 5-10 he EPA assigns a control eith rupture discs under no fficiency of 98 percent foundations	<pre>x, 11-25x, etc.) fficiency of 100 per</pre>	cent for equipment	lesks serverally
co	ith rupture discs under no fficiency of 98 percent foundations  k (X) this box if you attached	r emissions routed to	o a flare under no	leaks controlled signs a control real operating

	place, complete the in procedures. Photocop type.	tottowing table re by this question a	garding thos nd complete	it separate	ely for each	process
CBI						
[_]	Process type		• • • • • • • • • • • • • • • • • • • •	N/A		
	Equipment Type	Leak Detection Concentration (ppm or mg/m³) Measured at Inches from Source	Detection Device	of Leak Detection	Repairs Initiated (days after detection)	Repairs Completed (days afte initiated)
	Pump seals					•
	Packed					
	Mechanical					
	Double mechanical					
	Compressor seals					
	Flanges					
	Valves					
	Gas					
	Liquid					
	Pressure relief devices (gas or vapor only)					
	Sample connections	•		•		
	Gas					
	Liquid					
	Open-ended lines					
	Gas					
	Liquid					
	1Use the following of POVA = Portable org FPM = Fixed point m O = Other (specify)	anic vapor analyze	er			
		N/A				

121	Vessel Type Pro-	Seals	of Stored Materials	Throughput (liters per yeu) 55 gallon	Filling Rate (gym)	Auration (min)	Vessel Liner Diameter (n)	Height	Volume	Vessal	Design Flov Rate	Vent Diameter (cm)	Control Efficiency (2)	fasis for Estimate
				So Barron							-			
							<del></del>				.——			
													-	
						<del></del>	<del></del>							
	<sup>l</sup> Use ti	e follovi	ng codes to	designate ves	sel type	:	· · · · ·	the fol	loving	codes to d				• • • •
	F CIF CIF CIF CIF CIF CIF CIF CIF CIF CI	Fixed ro Contact Honconta External Pressure Horizonta Undergro	of internal floa ct internal ( floating roc wessel (indi al and	ating roof floating roof of Icate pressur	e rating	)	HSI HS2 HS2R IMI UM2 IMW WMI WM2 WWW	<ul> <li>Hech</li> <li>Shoe</li> <li>Rim</li> <li>Liqu</li> <li>Rim</li> <li>Vesti</li> <li>Vapor</li> <li>Rim</li> <li>Uesti</li> </ul>	anical: - wounted, id wounted nounted her shie r wounted nounted	shoe, prims d secondary secondary end resilie shield eld d resilien secondary	ary y ent fill nt fille	led seal, ad seal, p		:
	CIF	Fixed ro Contact Huncontac External Pressure Horizonta Undergrou	of internal floa ct internal ( floating roc wessel (indi al und  percent of t	ating roof Floating roof	e rating	)	HSI HS2 HS2R IMI UM2 IMW WMI WM2 WWW	<ul> <li>Hech</li> <li>Shoe</li> <li>Rim</li> <li>Liqu</li> <li>Rim</li> <li>Vesti</li> <li>Vapor</li> <li>Rim</li> <li>Uesti</li> </ul>	anical: - wounted, id wounted, nounted her shie r wounted nounted	shoe, prims d secondary secondary end resilie shield eld d resilien secondary	ary y ent fill nt fille	led seal, ad seal, p	Primary	
	CIF	Fixed rose Contact Huncontact Peternal Pressure Horizonta Undergrowte weight than float por flow r	of internal float ct internal ( floating roc vessel (indi al and  percent of t ting roofs rate the eais	ating roof floating roof of leate pressur the listed sai	e rating bstance. device v	include (	HSI HS2 HS2R IHI IHI WHI WHI WHI WHI WHI WHI WHI WHI	# Hech # Shoe # Rim-t # Liqu # Rim-t # Vapot # Vapot # Weath wolatil	anical: - accented nounted nounted her shie r accented nounted nounted ner shie le organ	shoe, primal secondary secondary secondary shield shield secondary	ary y ent fill et fille	led seal, ad seal, p	Primary	
	CIF	Fixed rose Contact Huncontact Peternal Pressure Horizonta Undergrowte weight than float por flow r	of internal float ct internal ( floating roc vessel (indi al and  percent of t ting roofs rate the eais	ating roof floating roof of Icate pressur	e rating bstance. device v	include (	HSI HS2 HS2R IHI IHI WHI WHI WHI WHI WHI WHI WHI WHI	# Hech # Shoe # Rim-t # Liqu # Rim-t # Vapot # Vapot # Weath wolatil	anical: - accented nounted nounted her shie r accented nounted nounted ner shie le organ	shoe, primal secondary secondary secondary shield shield secondary	ary y ent fill et fille	led seal, ad seal, p	Primary	:

DADT	NON-ROUTINE	PELEACES
PAKT	MUN-KUULIME	KELENSES

10.23	Indicate the date and time when the release occurred and when the release companies was stopped. If there were more than six releases, attach a continuation state all releases.	eased or heet and
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Release	Date Started	Time (am/pm)	Date Stopped	Time (am/pm)
	None	N/A	N/A	N/A
2	n popular de la compansa de la comp			
6				

## 10.24 Specify the weather conditions at the time of each release.

Release	Wind Speed (km/hr)	Wind Direction	Humidity (%)	Temperature (°C)	Precipitation (Y/N)
1	N/A	N/A	N/A	N/A	N/A
2					
3					
<u>4</u> .					
5					-
6					

ر— <sub>1</sub>	Mark (X)	this box	if you attach a	continuation	sheet.	•
[_]	Mark (X)	this box	it you attach a	continuation	sneet.	

ORIGITS  Post Office ZIP Code	B 770024
Initials of Receiving Clerk	X = max = ma
ACCEPTANCE  day delivery  ACCEPTANCE  ACCEPTANCE  Accepted for this destination after deposit deadline for nevi day delivery therefore, for delivery by second day	DELIVERY WAS Date. A 1/2 ATTEMPTED PM
(Consult vour focal Express Mail Next Day Service arrector, for denoted enablem for different destinations	Signature of Deliviny Employee
Account Number  (Using an authorized number indicates postage and fees paid.)	WAIVER OF SIGNATURE AND INDEMNITY  i wish delivery to be made without obtaining the signature of the addressee or the addressee is agent and I authorize the delivery employee to sign that the shipment was delivered and understand that the sionature of the delivery employee will constitute valid proof of delivery  SIGNED  i wish delivery to be made without obtaining the signature of the addressee's agent and I addressed in a great proof of delivery employee will constitute valid proof of delivery
Express Mail Corporate Account No.:	ADDRESSEE'S COPY
FROM:  US PUTT OF ENERGY  EARSAS CITY AREA OFFELD  PO BOX 410202  EANSAS CITY. MO 64141	TO: Telephone Number:
* Label 11-8 (Jan 1987) * N.S.G.Z.O-1987-178-848; 179-0	70; 179-071

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BEST GUPY AVIALABLE